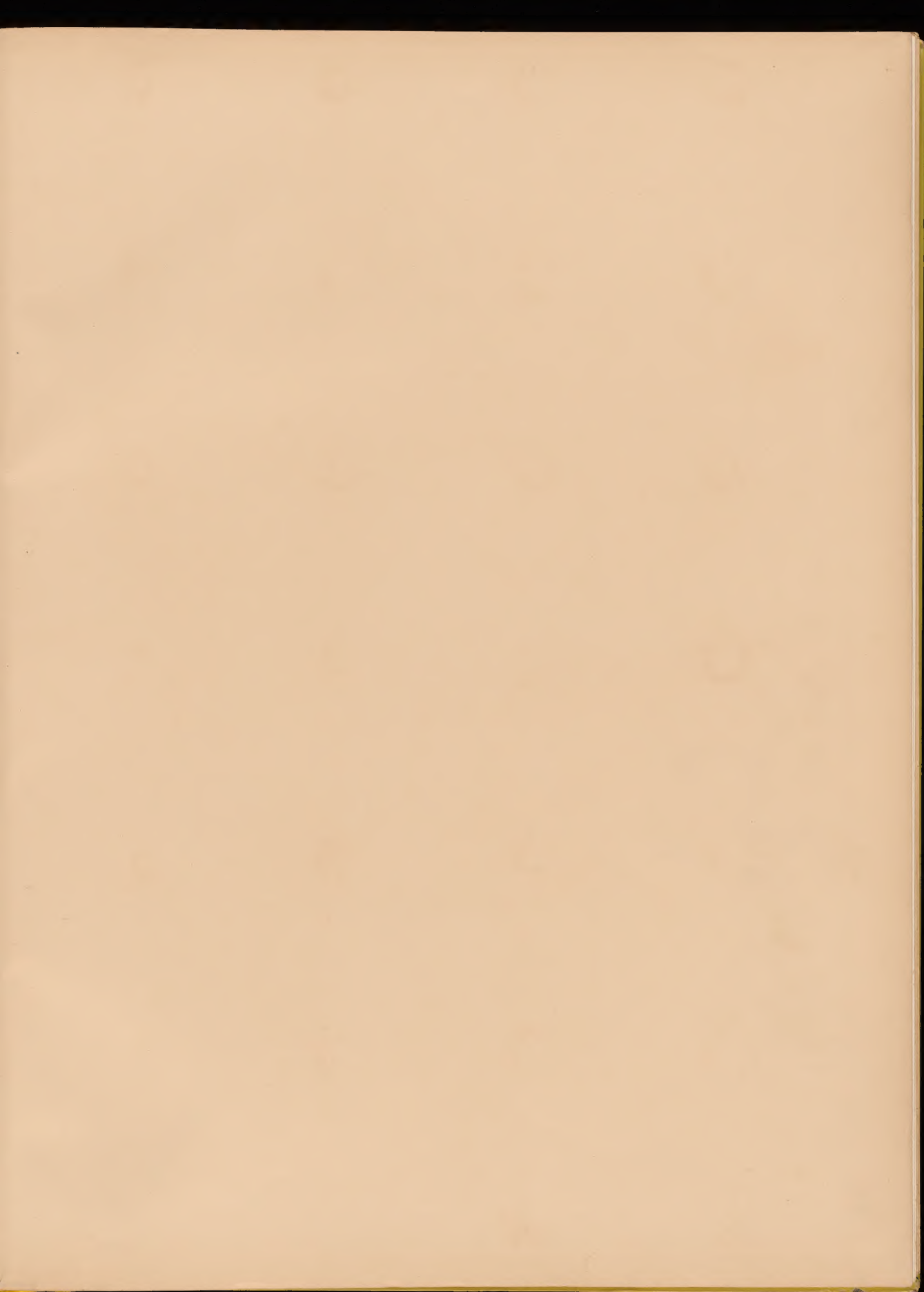
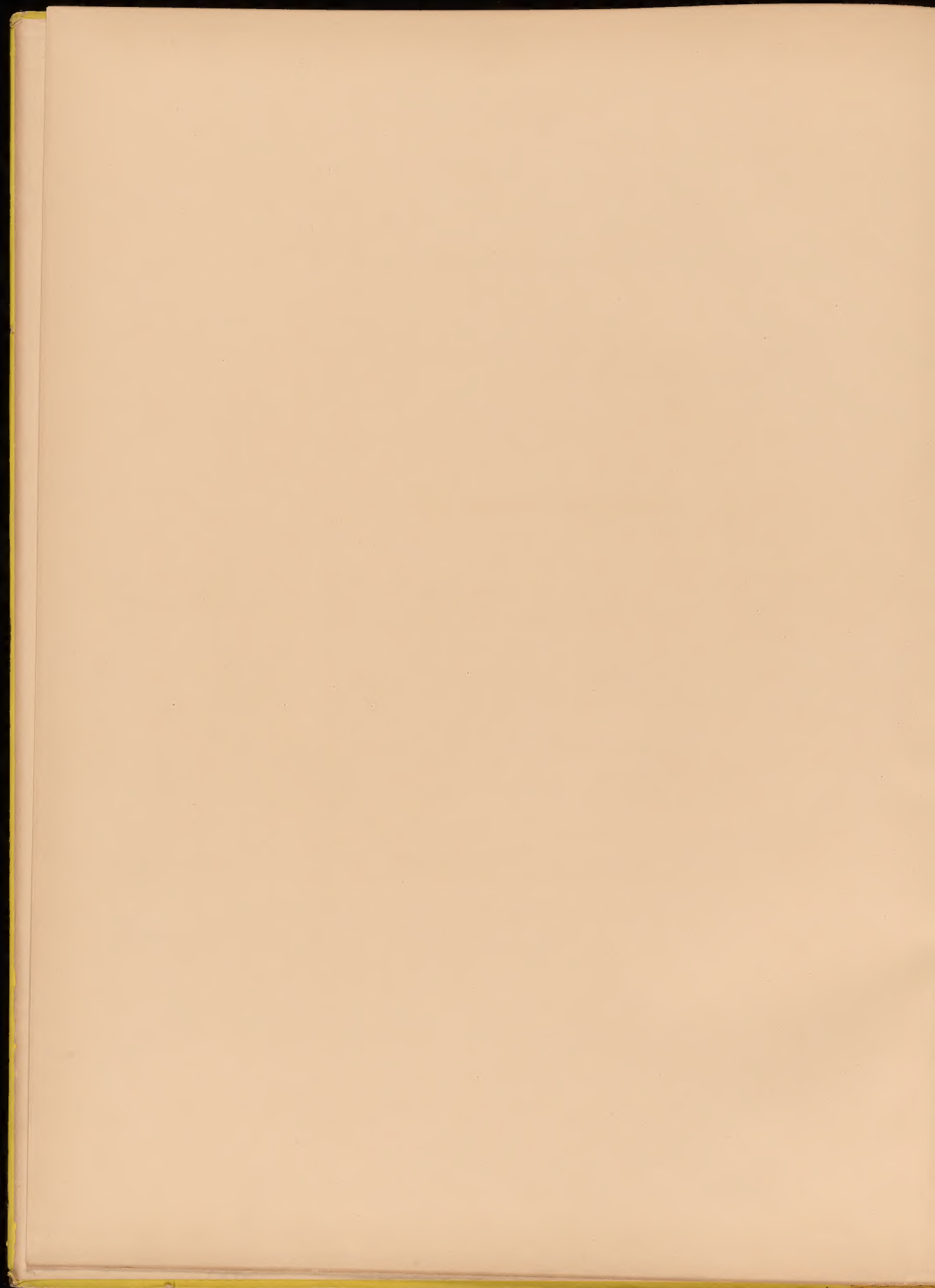


ORIENTAL CERAMIC ART



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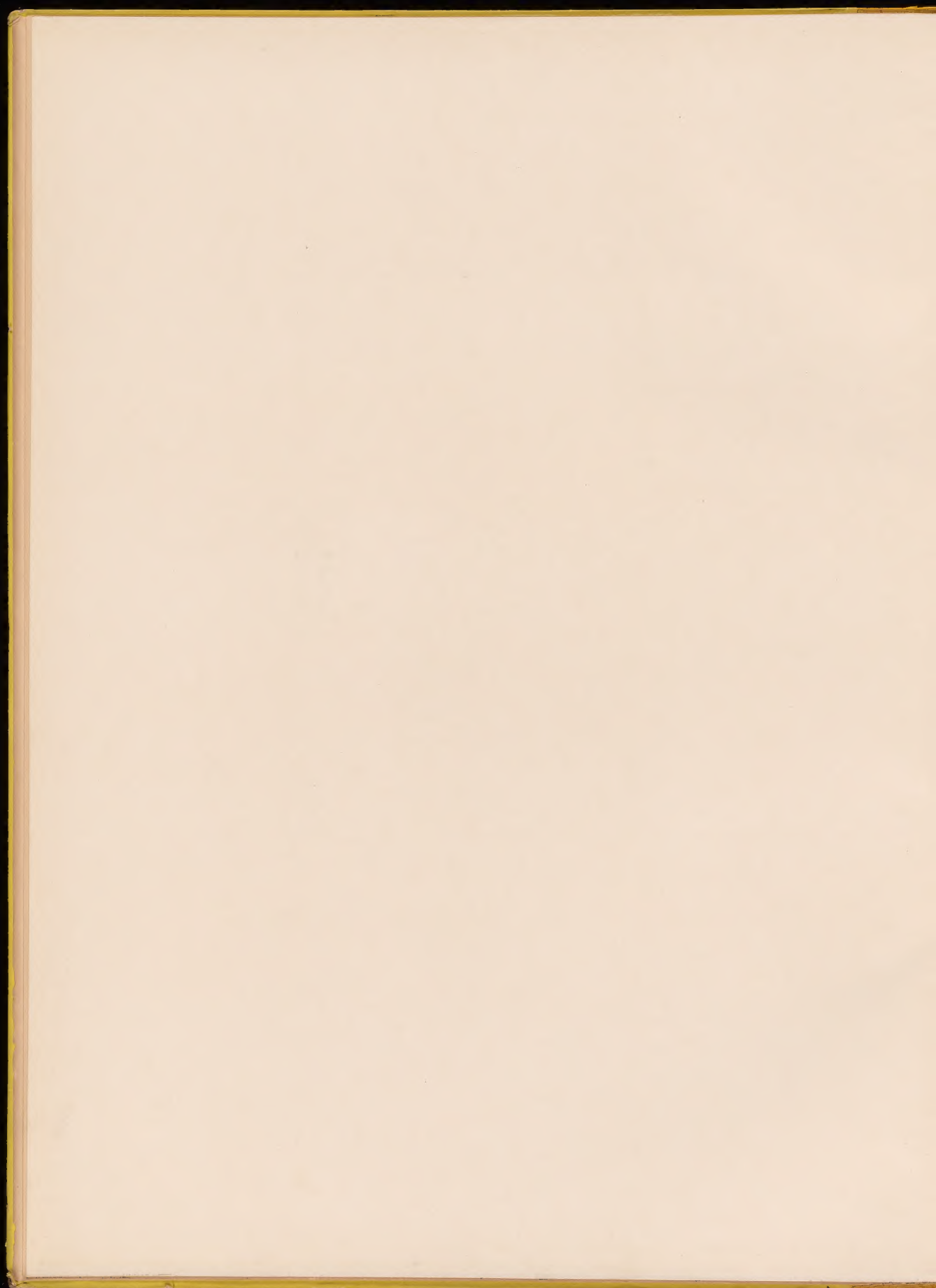


ORIENTAL CERAMIC ART

COLLECTION OF
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SECTION SEVEN



An ancient legend related by Huai Nan Tzū, who died B. C. 122, promulgates the romantic idea that the two are separated all the year round except on the seventh night of the seventh moon, when Magpies fill up the Milky Way to enable the Spinning Damsel to cross over. A legion of poetical allusions have sprung from this passage picturing the separated lovers gazing at each other from afar or celebrating their joyful reunion.* Of the four medallions on the exterior of the bowls, two opposite ones contain separate pictures of the same cowherd and spinster; the other two are filled with outdoor scenes, in one of which the Spinning Damsel is seen walking under a tree with maiden attendants, in the other in amorous dalliance with her lover in a garden pavilion.

Some of the most beautiful bowls and plates of this time, as well as richly decorated vases, have the mark of *Shên-tê-t'ang*—"Hall for the Cultivation of Virtue"—inscribed underneath. It has already been explained that this was the designation given by the emperor to one of the halls of his palace. That the mark really belongs to this reign has been doubted, but it is proved by a small bowl with everted brim in the Hoppisley Collection (No. 367 in the catalogue), which is "decorated with a spray of white plum and longevity fungus, beautifully painted, accompanied by a poem from the pen of the Emperor *Tao-kuang*, and bearing his seal attached. The seal is in the form of a little oval panel with the two characters, placed vertically, reserved in white upon a vermillion ground. Nothing is sacred to the fraudulent imitator in China, and this hall-mark is often forged, so that it is found, as Sir A. W. Franks remarks (*loc. cit.*, page 213), "on specimens of different kinds and very varied quality."

Some of the white unglazed porcelain made at this time, reminding one of the Parian ware of European potteries, is finely modeled and of finished technique. It is seen especially in articles intended for the writer's table, such as cylindrical brush-pots, seals, boxes for seal vermillion, and the like.

The Emperor *Hsien-fêng* succeeded to the imperial throne in 1851. During his reign the south of China was ravaged by the "Long-haired Rebels" (the *Tai-pings*), who started from the provinces of Kuangtung and Kuangsi, reached the province of Kiangsi in his third year, and were not finally expelled till the spring of the third year of the reign of his successor, *T'ung-chih* (1864). Ching-tê-chên was besieged and taken by the rebels, the imperial potteries were burned to the ground, and the workmen either massacred or driven away. Imperial porcelain of this period is consequently rare, as it could only have been produced and forwarded to Peking during the early part of the reign. It resembles in character the production of *Tao-kuang*, and is inscribed generally with the six-character mark of the reign, penciled underneath in red in the ordinary script. Among the pieces I have seen that are worthy of special notice are vases of good form decorated with nine five-clawed dragons, painted in soft enamel colors, on a white background which is etched in the paste with scrolled waves; and a dinner service of bowls, cups, and saucer-shaped dishes, painted in colors with processional figures of the eighteen Lohan, or Arhats of early Buddhist history.

In the third year of the reign of the young Emperor *T'ung-chih* (1864), after the expulsion of the rebels from the province of Kiangsi by Li Hung-chang, who was appointed acting viceroy in that year, while Tsêng Kuo-fan, the celebrated viceroy, took command of the imperial army in the field, the imperial manufactory at Ching-tê-chên was rebuilt. A short account of the seventy-two buildings which were erected more or less on the old foundations by the new director, Ts'ai Chin-ch'ing, who was appointed at this time, has already been given in Chapter IX. Some idea will be gained of the porcelain manufactured by a discussion of the official list



FIG. 296.—Snuff-bottle; celadon on modeled decoration; Ch'ien-lung.

* Mayer's *Chinese Reader's Manual*, pp. 97, 98.

of the articles which were requisitioned in this year for the use of the emperor. This is extracted from the Annals of the Province of Kiangsi (*Chiang hsi T'ung chih*, book xciii, folio 13-16), where it comes immediately after the official list of the reign of *Yung-ch'eng*, the analysis of which has been given already in Chapter XIII. The new list is dated the third year (1864) of the reign of *T'ung-chih*. It is comprised under two headings, of which the first is devoted to the vases and larger pieces (*cho ch'i*), the second to the round ware (*yuán ch'i*).

"A. VASES TO BE SENT TO PEKING FOR THE EMPEROR. (大運琢器.)"

"1. Quadrangular vases with apricot-shaped medallions and two tubular handles enameled with the Chün glaze. (均釉四方杏元雙瑱瓶.)"

The modern *Chün Yu* is so called because the colors of the glaze are intended to resemble that of the ancient Chün-chou porcelain of the *Sung* dynasty. It is the *soufflé* glaze with a greenish-blue flecking and dappling on a reddish ground, the red being subordinate to the blue, which has been appropriately named "Robin's Egg" by American collectors. The form described here is that of the brilliant *flambé* quadrangular vase illustrated in Plate XLVI, which has an apricot-shaped medallion worked in slight relief in the paste under the glaze, in front and behind, and two wide tubular handles at the sides.

"2. Quadrangular vases with apricot-shaped medallions and two tubular handles invested with Ko Yao glaze. (哥釉四方杏元雙瑱瓶.)"



FIG. 297.—A Modern Crackled *sung-de-beuf* Vase of intense and brilliant color.

The shape is exactly the same as that just described, and it occurs not infrequently from the reign of *Ch'ien-lung* downward, in the stone-colored crackle traversed by a network of reddish lines, which is known as *Ko Yu*. *Ko* means "elder brother," and the name dates from early in the *Sung* dynasty, when two brothers named Chang are related to have made celadon ware at Lung-ch'üan. The productions of the elder brother, which were distinguished by having a crackled glaze, were called *Ko Yao*, and the name, as applied to crackled porcelain generally, has survived to the present day. It is given especially to the ordinary stone-gray crackle which is seen in every Chinese collection. The crackling is produced by combining with the materials of the glaze a natural stone called *Lan-f'ien shih*, from its place of production, which appears to be a kind of compound magnesia silicate allied to steatite, and which takes the place of the lime that gives solubility to the ordinary glaze.

"3. Quadrangular vases with the *pa kua* symbols enameled with the *Ko Yao* glaze. (哥釉四方八卦瓶.)"

These are tall oblong vases of square section with the eight trigrams of ancient Chinese mystic lore worked in relief underneath the crackled stone-gray glaze. The eight symbols usually stand out in relief on each of the sides, but sometimes, as in the vase of this kind illustrated in Plate XXIII, there are two displayed on each side, separated by the dual *yin-yang* symbol in the middle. Vases of this form and design stand upon Taoist altars holding the slips of bamboo used in divination; the vase is shaken, and the stated number of slips are selected at each operation to determine the prognostic, which is worked out by the presiding seer with the aid of his divination books, while the worshiper is burning incense before the sacred shrine.

"4. Vases in the form of ancient wine-vessels of jade enameled copper-red. (霽紅玉壺春瓶.)"

Yu hu ch'ün is the common name of a vase with bulging pyriform body poised upon a circularly rimmed foot, contracting gradually upward with a narrow neck and expanding sharply at the orifice to make a wider horizontal lip. The name comes from the modeling of the form on the lines of the graceful wine-vessels that used to be carved out of jade, although these last were generally ewers furnished with a curved spout, an open flowing handle, and a knobbed

cover, while the porcelain type is an ornamental flower-vase. The term *chi-hung* used here answers to the bright ruby-red derived from copper, which is the most successful of the modern single colors, and occasionally will almost rival the celebrated *sang-de-bœuf* of the *K'ang-hsi* period in the brilliancy of its flashing tones. The character *chi* employed above is an unauthorized form, that one would hardly expect to find in an official list; it means the color of the sky after rain, and can consequently be combined properly only with *ching*, "blue," to form *chi-ch'ing*, as in No. 42, below, and another character with the same sound, meaning "sacrificial," ought to be substituted, *chi-hung*, or "sacrificial red," being the traditional name of the ruby-red cups which were made in the reign of *Hsüan-té* for the ritual worship of the emperor on the Altar of the Sun.

"5. Vases in the form of ancient wine-vessels of jade with threads worked in relief decorated in blue. (青花起綫玉壺春瓶)"

I have not seen an example of this kind, but am told that the vases have encircling rings worked in the paste in the form of ropes, so as to divide them into sections for decoration in blue and white.

"6. Vases of the *Yü hu ch'un*, or carved jade type, decorated in blue with garden scenes inclosed by railings. (青花欄杆玉壺春瓶)"

These vases, the form of which has been already described, have an open-rail fence drawn round the lower part of the bulging body, inside which rise clumps of graceful bamboos, shrubs of nandina with bunches of berries and flowering trees of all kinds, with an occasional rockery in the intervals. The design dates from the reign of *Ch'ien-lung*.

"7. Vases in the form of paper-beaters, with the *t'ai-chi* symbol, invested with imperial glaze decorated in colors. (花廠官釉太極紙槌瓶)"

The *chih-ch'ui ping*, or "paper-beater vase," has a cylindrical body rounding in above to a straight upright neck, of about the same length as that of the body of the vase. If the body is more bulging and the upright neck proportionally narrower, as in the powder-blue vase which is illustrated in Plate XCIII, we have the *Yu-ch'ui P'ing*, or "oil-beater vase," the shape being that of the mallet commonly used in China for crushing seed to extract the oil. The *t'ai-chi* symbol referred to is the creative monad disk dividing into the dual *yin yang*, "darkness and light," which is displayed in Plate XXIII.

"8. Quadrangular vases, with the elephant symbol of great peace enameled sky-blue. (天青四方太平有象瓶)"

The rebus *T'ai ping yü hsiang* (fifth to eighth characters above), "an augury of great peace," was referred to in Chapter V, in the description of an ancient pallet of *Sung* porcelain etched with the figure of an elephant. The vases referred to above have two handles molded in the form of elephants' heads, implying the same happy augury. The modern single color called *t'ien-ch'ing*, or "sky-blue," is derived from cobalt mixed with the feldspathic glaze of the high fire; it is of somewhat darker tone than the *clair de lune* of older times, which was produced by the combination of the same ingredients with a purer and more translucent glaze.

"B. ROUND WARE TO BE SENT TO PEKING FOR THE EMPEROR. (大運圓器)"

"9. Medium-sized bowls decorated in brown with dragons. (紫龍中盤)"

These are the bowls with five-clawed imperial dragons of maroon tint; the decoration was painted on with the copper-red color *sur le cru*, and the piece was subsequently glazed and fired in the large furnace, so that the technique is the same as that of the blue and white.

"10. Medium-sized bowls enameled in copper-red. (霽紅中盤)"

Chi-hung is the ruby-red monochrome derived from copper silicate referred to under No. 4 of this list.

"11. Large bowls painted in blue with the Indian lotus. (青西蓮大盤)"

The Western or Indian lotus (*Hsi Fan lien*) is the most common motive of the conventional floral scrolls with which Chinese porcelain is so often decorated.

"12. Five-inch dishes painted in blue with the Western lotus. (青西蓮五寸盤)"

The dishes and plates of a Chinese service are all round, and what we should call saucer-shaped. In this list those of half a foot in diameter and upward are called *p'an*, "round dishes"; those of less size are called *tieli*, which we may conveniently render as "platters."

"13. Medium-sized bowls painted in blue with the eight mystic trigrams and storks in the midst of clouds. (青雲鶴八卦中盤)"

The bowls are decorated outside with eight flying storks enveloped in scrolled clouds. The stork is the aerial courser of the Taoist immortals, and it is often represented carrying in its beak bamboo slips of fate inscribed with the *pa kua* symbols.

"14. Wine-cups decorated in enamel colors with narcissus-flowers. (五彩水仙花酒盅)"

The wine is served hot at the Chinese banquet, poured into tiny bowl-shaped cups of porcelain. The *Narcissus tazetta*, which has white flowers with yellow cups in the center, is a favorite floral decoration on porcelain; it is the *shui hsien hua*, "the water-fairy flower," of the Chinese.

"15. Wine-cups with expanding rim painted in red with dragons. (彩紅龍撇口酒盅)"

This is the design most frequently seen on these little cups. The dragons, of the imperial five-clawed type, are painted in coral-red over the white glaze; the porcelain, having been previously glazed and fired in the large furnace, is decorated with the iron-red color, and fired a second time in the muffle stove. The bowl illustrated in Plate LXXVII may be referred to as a beautiful example of this kind of decoration.

"16. Round dishes a foot in diameter decorated in blue with a pair of dragons. (青雙龍滿尺盤)"

"17. Soup-bowls with dragons incised in the paste under a dark imperial yellow glaze. (嬌黃暗龍湯盤)"

The soup-bowl (*t'ang wan*) is smaller and shallower than the ordinary rice-bowl (*fan wan*). The first character used here means literally "pretty" or "bright"; it is substituted for another of the same sound meaning "watered," which is technically given to several single-colored glazes applied with a brush. *An lung* means "concealed dragons," but *an* has a special technical meaning in ceramic art, and *an hua* is the expression always used for decorations etched with a style in the paste, which are brought out more strongly by holding the piece up to the light.

"18. Medium-sized bowls of barrel-shaped form with dragons incised in the paste under a bright yellow glaze. (嬌黃暗龍墩式中盤)"

"19. Teacups enameled bright yellow. (嬌黃茶盅)"

The teacup (*ch'a-chung*) referred to here is taller and more upright in form than the *ch'a-wan*, and differs in never being furnished with a cover, but the names are often used indiscriminately; neither has a handle at the side like our teacups. When a teapot is not used, the tea-leaves are infused in cups with covers, which are called *kai-wan*, *kai* meaning "cover." When the tea is drunk, the cover is manipulated so as to leave only a narrow chink at the rim of the cup, to keep the tea-leaves inside.

"20. Medium-sized bowls with dragons incised in the paste under a bright yellow glaze. (嬌黃暗龍中盤)"

"21. Medium-sized bowls of ringlike outline painted in blue with designs of the three fruits. (青花三果班子中盤)"

The three fruits which are usually represented are the peach, pomegranate, and Buddha's-hand citron, emblems of the three abundances (*san fo*) of years, sons, and promotions.

"22. Soup-bowls with expanding rims with dragons incised in the paste under a bright yellow glaze. (嬌黃暗龍撇口湯盤)"

"23. Round dishes six inches in diameter painted in blue with a pair of dragons. (青雙龍六寸盤)"

"24. Round dishes a foot across painted in blue with a decoration of spiral scrolls inclosing longevity characters. (青花蠶紋壽字滿尺盤)"

PLATE LXIX.

K'ANG HSI BLUE AND WHITE
DRAGON PLATE

Plate (Pan tab), 20 $\frac{1}{4}$ inches in diameter, painted in underglaze cobalt-blue of lighter and darker shades, in the free, artistic style and tone of coloring characteristic of the K'ang-hsi period (1662-1722).

The interior of the plate is decorated with a four-clawed dragon emerging from the waves with flames proceeding from its shoulders and flanks, while two fishes, one a carp, are swimming in the water which covers the ground with curling crest, dotted with foam. The border of the plate is encircled by scrolled waves; its under surface is ornamented round the rim with six emblems tied with fillets, including a couple of birds, a round jewel, a diamond (liang shang), an umbrella, a conch shell, and a palm-leaf.

The mark underneath, inscribed within a double ring, is Ta Ming Ch'ing hua nien chih, "Made in the reign of Ch'ing-hua of the Great Ming [dynasty]," but the form and style of decoration indicate certainly the reign of K'ang-hsi. The fabled metamorphosis of the "Fish Dragon" (Yu Lung) is symbolical of the scholar's success at the state competitive examinations.



1





"25. Teacups (*Chi'a Wan*) painted in blue with sprays of the *Olea fragrans* flower. (青木樨花茶盞)"

The *Mu-hsi* is a dwarf variety of *Olea fragrans* with reddish flowers, which are even more sweet-scented than those of the ordinary white variety; it is but rarely employed for the decoration of porcelain.

"26. Medium-sized bowls decorated in enamel colors with sprays of precious lotus. (五彩寶蓮中盞)"

The precious lotus (*pao lien*) is one of the varieties of the *Nelumbium speciosum* held sacred by the Buddhists, who liken the precious jewel of their faith to the limpid drops of pure water that collect upon its broad peltate leaves.

"27. Teacups decorated with white bamboo upon a ground painted red. (彩紅地白竹茶盞)"

This charming design, with the graceful leafy sprays of the bamboo reserved in white and relieved by a soft coral-red background, was adopted in the imperial manufactory in the *Ch'ien-lung* period, the seal of which is found penciled in blue underneath bowls of almost eggshell thinness and purest color. The red is produced from iron peroxide prepared by the incineration of the green sulphate. The more modern bowls are thicker, and the red tends to become of a brick-dust hue.

"28. Six-inch saucer-dishes painted in blue with the 'three friends' and figure scenes. (青三友人物六寸盤)"

The "three friends" (*sau yu*) in ordinary Chinese parlance are the evergreen pine, the bamboo, and the winter-flowering plum, which keep green in cold times of adversity. In the decoration of porcelain they are usually grouped in a landscape scene with the figures of hermits or aged pilgrims. But there is another group of "three friends" in the persons of Confucius, Buddha, and Lao Tzŭ, who are often depicted examining scrolls of ancient lore, or engaged in distilling the *elixir vite*.

"29. Tea-dishes (*Chi'a P'an*) painted in blue with a pair of dragons (青雙龍茶盞)"

There are no porcelain saucers in Chinese tea-sets, their place being taken by boat-shaped saucers of metal, lacquer, or some other material. The tea-dishes referred to here are little trays with upright borders of oblong, four-lobed, or fluted outline, like the one that was described under the reign of *Chia-ch'ing*, with the imperial verse inscribed upon it.

"30. Six-inch saucer-shaped dishes decorated with green dragons on a ground with scrolled waves incised in the paste and painted in colors. (彩暗水綠龍六寸盤)"

"31. Round dishes a foot in diameter, painted in blue with archaic phoenixes. (青夔鳳滿尺盤)"

The *k'uei feng* is the peculiar conventional phoenix of ancient bronzes in which the body degenerates into ornamental scrolls

"32. Round dishes nine-tenths of a foot across, with a blue ground inclosing dragons and clouds painted in yellow. (藍地彩黃雲龍九寸盤)"

This is a very ancient style of decoration, which we noticed in the description of the imperial porcelain of the reign of *Chia-ch'ing* (1522-66). The piece is first treated like an ordinary blue and white specimen, which is to have the decoration reserved in white upon a mottled blue ground, the white parts being subsequently enameled yellow, and the dish being refired to fix the color

"33. Medium-sized bowls decorated with phoenix medallions painted in ruby-red underneath a pure white ground. (填白釉寶燒紅團鳳中盞)"



FIG. 298.—Vase of semi-egg-shell texture, decorated in underglaze blue, with relief modeling touched with colors, and with panel pictures painted in colors.

The red of the *grand feu*, which is derived from copper, has had the name of *pao shao hung*, literally "ruby-fired red," since the time of *Hsüan-tê* (1426-35), when it was first used in the decoration of porcelain, and there is a widespread conviction in China that the color is actually produced by rubies pulverized and combined with the materials of the glaze. In the present day amethystine quartz (*tsü ying shih*) is used in the preparation of the color, but this can act only in modifying its solubility and penetrative power, because, like the ruby, amethyst becomes colorless in the intense heat of the furnace. The expression *t'ien pai yu*, which is used here to distinguish the class from that painted in red under a celadon ground, like No 39 in this list, has also given rise to much misapprehension both in China and elsewhere. The character *t'ien*, "filled in," is substituted for an older one of the same sound meaning "pure" or "sweet," and the expression can hardly mean "white glaze to be filled in with colors," although Du Sartel, in *La Porcelaine de Chine*, gives it so on Julien's authority, and makes it the heading of a whole class, which, as a critic justly observes, threatens to remain without a member to represent it.

"34. Teacups painted with yellow dragons and clouds relieved by a blue ground. (藍地彩黃雲龍茶盞)"

"35. Six-inch saucer-shaped dishes of copper-red. (霽紅六寸盤)"

"36. Medium-sized bowls of copper-red. (霽紅中盤)"

"37. Seven-inch saucer-shaped dishes of copper-red. (霽紅七寸盤)"

"38. Soup-bowls of depressed barrel-shaped form enameled brown. (紫金釉墩式湯盤)"

This glaze, called *tsü chin*, or "burnished gold" (*or bruné*), by the Chinese, is derived by them from a native ferruginous mineral called *tsü chin shih*, which is combined with the glaze in the way so fully described in Père d'Entrecolles's Letters.

"39. Medium-sized bowls painted with phoenix medallions in red under a celadon glaze. (冬青釉紅團鳳中盤)"

Tung-ch'ing is the Chinese name of the soft sea-green shade which we call celadon. In modern books it is often written, as it is here, with "winter" as the first character, as if it were "evergreen"; originally it appears to have been written with a character of the same sound (*tung*) meaning "east," the tint being that of the porcelain produced during the *Sung* dynasty at the eastern capital, the modern Kai-feng-fu, in the province of Honan. The combination of the decoration in underglaze copper-red of the *grand feu* with the celadon glaze has been already noticed in the description of the porcelain of the reign of *Yung-ch'eng*.

"40. Seven-inch round dishes decorated in the five enamel colors with spiral scrolls and words of happy augury. (五彩窠紋如意七寸盤)"

The spiral-scroll design is likened by the Chinese to "silkworm coils"; forms of it occur on the most archaic bronzes. A fitting felicitous inscription, which is often displayed on modern imperial porcelain, is *Wan shou wu chiang*, "A myriad ages never ending!" Several other formulæ were found in the lists of the *Ming* dynasty given in Chapter VII.

"41. Teacups (*Ch'a chung*) decorated in the five enamel colors with mandarin ducks and lotus-flowers. (五彩鴛鴦荷花茶盞)"

The beautiful waterfowl called *Anas galericulata* is commonly known as the "mandarin duck." They exhibit, when paired, a remarkable attachment to each other, and have thus become emblems of connubial love and fidelity in a higher sphere. This decoration is often met with, and it has already been described in the ceramic art of the *Ming* dynasty.

"42. Teacups (*Ch'a Wan*) enameled deep blue. (霽青茶盞)"

The character *chi* is defined in dictionaries as the color of the clear sky after rain, and *chi ch'ing* in ceramic parlance is the deep blue monochrome tint derived from cobalt, which in its deepest shade, approaching that of indigo, becomes the *ta ch'ing* of the Chinese, the *gros bleu* of Sèvres. It may be either blown on to form the "powder-blue" glaze, or painted on with the brush in the ordinary way.

"43. Teacups (*Ch'a Wan*) decorated in colors with the eight precious emblems. (彩八寶茶盞)"

PLATE LXX

BLUE AND WHITE BEAKER

BEAKER-SHAPED VASE

(Hua Ku), 17 $\frac{1}{2}$ inches high, of solid material and somewhat archaic form, with a flat base not glazed; decorated with etched borders and painted blue designs, executed in the style of the Wan-li period (1573-1619)

Three bands of wavy conventional scrolls, lightly etched in the paste under the glaze, encircle the vase so as to divide its surface into two parts, which are decorated in brilliant cobalt-blue of shaded tones. The body represents a combat between a tiger, the king of land animals, and a dragon, prince of the powers of the air. The tiger is in the foreground, crouching upon the reedy bank of a lake, from the waves of which a dragon has just emerged and is seen approaching on the right, with its huge scaly form half hidden by clouds; rocks and clouds fill in the background. The neck of the vase is painted with a rocky landscape with palms rising in the background; a K'i-lin is seated in front, with flames issuing from its throat and body, indicative of its supernatural attributes; it has a scaly skin; a two-horned dragon's head, the hoofs of a deer, and the spreading tail of a lion. A phoenix is flying in the air above.



B
The first part of the book is devoted to a description of the various forms of the verb 'to be' in the different dialects of the English language. The second part contains a list of the most common idioms and phrases used in the same language. The third part is a collection of the most beautiful sentences and passages from the works of the great English writers. The fourth part is a list of the most common errors and mistakes made by the English speakers. The fifth part is a list of the most common words and phrases used in the English language. The sixth part is a list of the most common words and phrases used in the English language. The seventh part is a list of the most common words and phrases used in the English language. The eighth part is a list of the most common words and phrases used in the English language. The ninth part is a list of the most common words and phrases used in the English language. The tenth part is a list of the most common words and phrases used in the English language.





The *Pa Pao* referred to here are the eight precious emblems of the Taoist cult, the several attributes of the eight *genii*, or immortals, which are displayed on the large pilgrim bottle in Fig. 50.

"44. Large bowls decorated with the *Pa Hsien* painted in blue, and sea-waves penciled in red (彩紅海水青花八仙大盤)"

The eight Taoist immortals crossing the sea in procession is a favorite subject of decoration for the sides of a bowl, each one holding in his hands his distinguishing attribute. A large bowl of the old *famille verte* is illustrated by the inimitable pencil of Jules Jacquemart in Plate IX of *Histoire de la Porcelaine*, although the author, in his description of the bowl, ingeniously discovered an emperor and empress accompanied by a band of musicians in the procession of figures.

"45. Medium-sized bowls decorated inside in blue and white, and outside in colors with lotus-flowers. (內青花外彩荷花中盤)"

"46. Bowls decorated with the eight symbols of happy augury. (八吉祥盤)"

The *Pa Chi-hsiang*, the well-known set of eight Buddhist symbols that are so often found on porcelain, were figured and described in Chapter IV.

"47. Bowls of peach-yellow porcelain decorated in green. (綠花桃黃瓷盤)"

These are said to be invested with a monochrome ground of the shade referred to, variegated with green mottled clouds, which are overlaid in the style of some of the composite *flambé* glazes.

"48. Round dishes five inches in diameter with purple and green dragons on a monochrome yellow ground. (紫綠龍嬌黃五寸盤)"

This is a very favorite pattern in the imperial palace to-day. It comes under the heading of the "three-colored decoration of the muffle stove." The outlines of the designs are incised in the paste and filled in with manganese-purple and copper-green glazes, so as to be displayed on the enameled yellow background. The bottom is also coated yellow, and the mark underneath is penciled in green.

"49. Three-inch platters (*Tieh*) with purple and green dragons on a monochrome yellow ground. (紫綠龍嬌黃三寸碟)"

"50. Soup-bowls of the fourth size enameled bright yellow. (四號嬌黃湯盤)"

"51. Round dishes five inches in diameter, decorated with phoenixes and clouds. (雲鳳五寸盤)"

"52. Medium-sized bowls decorated in the five colors, with dragons and phoenixes in the midst of flowers. (五彩龍鳳串花中盤)"

"53. Four-inch platters with purple and green dragons on a monochrome yellow ground. (紫綠龍嬌黃四寸碟)"

"54. Round dishes nine-tenths of a foot in diameter, decorated in colors with the eight Buddhist symbols of happy augury in the midst of a floral ground. (彩八吉祥串花九寸盤)"

"55. Large bowls decorated in colors, with phoenixes of archaic design flying through flowers. (彩變鳳串花大盤)"

There is a certain amount of repetition in this somewhat lengthy catalogue, but it is hoped that it may be a useful contribution to the terminology of the ceramic art, and it is with this view that the Chinese characters in the original have been inserted under each heading. Actual specimens of the articles described are not rare in collections, and it is always safest to go back from the known to the unknown, and it is more especially so in China, where nothing modern is acceptable unless it be modeled after the antique. Chinese decorative art in its present phase is highly conventionalized. It has never been distinguished for originality, and some of its most prominent motives, like the dragons and phoenixes that occur so frequently in the lists, have been adopted from India through Buddhist channels, and may be traced back to the *nagas* and *garudas* of Indian mythology.

Another aspect of modern porcelain manufacture is the direct and studied reproduction of

older pieces. The correct date is certainly inscribed upon the porcelain of the imperial factory, but it is rarely, if ever, found upon the productions of the private kilns. The most ambitious efforts of the private potters are carefully copied from ancient pieces, and the original marks, as well as every detail of the ornamental designs, are exactly reproduced. For the rest, the general rule is that the commoner the ware the more ancient the mark; and a visit to any ordinary crockery shop in China will show that nearly every blue and white cup on the shelves is marked *Hsüan-té*, and that most of the colored ware is inscribed *Ch'eng-lua*, although everything in the shop is avowedly modern, and the pieces have not the slightest pretensions even in style to such an early date as the *Ming* dynasty.

Some of the colorable imitations of celadons and other single colors come from Japan, but Japanese porcelain rings with a different note when tested, being made of other materials than that of China. The Chinese are in these the fabrication of fraudulent counterfeits, vases decorated with figure scenes, as overspread with sprays and blossoms of pieces are occasionally brilliantly executed to deceive the unwary. The modern decorated in enamel colors, are much tinged by the want of luster in the

For the single colors the greatest the rarest and most expensive, as

The vase shown in Fig 297 is *sang-de-boeuf* glaze of remark-

It rivals a genuine old Lang of crimson shades, albeit the thing in depth of tint. The perfect; the thick, grayish, mi-which the interior is coated is the foot of the vase has had remove drops of glaze that firing. It is impossible to drops, which usually occur in never on the old, when the tributed throughout, always line of mathematical regular exhibits no marks of the pol- the new pieces is much more

tends to run down, and the upper rim of the vase is often left perfectly white. I may perhaps be excused a personal reminiscence to express my meaning: On a visit to a curio-shop in Peking one day this year, I was shown a small *sang-de-boeuf* vase, the lower part of which displayed the richest color, but the upper two inches of the neck were a glassy white, and I remarked that, were it not for the neck, it might well pass for an old piece. A month later I was invited to see a collection that a traveler was making, and in the most prominent position was exhibited the same little vase, neatly mounted in a case, lined with pale blue silk, to throw out its color. Two inches of the neck had been sawn off, and the place had been so carefully rounded and polished that no suspicion of the fact had occurred to the purchaser, who fondly imagined that he possessed a genuine antique of the first water. I must confess that I did not expose the ingenious fraud of the "heathen Chinese" at the time, but am driven to do penance now as *particeps criminis*.

For cutting porcelain the jade-carver's wheel is the means commonly employed. The apparatus, which is worked by a treadle, is fitted with flat disks of soft iron of different sizes. The disk selected, when it has been fitted for use, is kept moistened at the edge with a paste



FIG. 299.—Typical "Fên-Ting" Vase of the K'ang-hsi period, of light weight, decorated in soft-toned blue under a soft-looking crackled glaze.

latter days also coming to the front in and have lately exported blue and white well as others with a mottled-blue ground prunus reserved in white, and the new cuted in this *K'ang-hsi* style in a way copies of the vases of the same period, less successful, and may be readily dis- colors, especially in the greens.

pains are lavished by the imitator upon giving the most remunerative result.

an example of a new specimen of ably rich and brilliant color.

Yao vase in its varied play crackled glaze wants some- technique, however, is less nutely crackled glaze with deeply fissured in places, and to be ground on the wheel to have "run" down during the remove all traces of such modern pieces of the kind— glaze, which is uniformly dis- terminates below in a straight ity, and the foot of the vase ishing wheel. The glaze in fluescent, so that the color

made of garnet or ruby powder mixed with water. It is astonishing to see how readily a large porcelain vase can be cut horizontally in two, or the rim of a chipped piece trimmed perfectly even, by a simple machine like this. Many a neat ovoid vase has been carved in this way out of the lower part of a broken beaker; and, by the same means, originally oblong tiles, intended to be inlaid in woodwork, are often found to have been bisected longitudinally, so that the two faces may be framed and mounted separately as companion pictures.

The imperial porcelain of the present reign of *Kuang-hsü* continues to be decorated in the same lines, and it does not call for any special notice. There has been some attempt at a revival of the ceramic art under the patronage of the empress dowager, who has ruled China during two long minorities. In addition to her other accomplishments, she is a professed artist and calligraphist, and a picture from her pencil with her autograph signature is often seen occupying the place of honor among the birthday gifts of a high mandarin. The special seals attached to the porcelain made for her palace have been already given in Chapter IV.

Quite recently Ching-tê-chên has been devastated by floods brought down by the mountain torrents, and a sad account of ruin and desolation is related by Rev. Virgil C. Hart, D.D., one of the latest missionary visitors to the place. It is to be hoped that better times are in store for China, and for the porcelain industry, which was once one of her chief glories. As M. Grandidier says, in concluding his work (*La Céramique Chinoise*, page 224): "The modern period, up to the present day at least, is little worthy of our attention; the art is dormant, and holds itself aloof, disowned, abandoned, dishonored. Cheapness attracts the buyer. The fatal consequence is a common product; quality is incessantly sacrificed to quantity. The hour of decadence struck a hundred years back, and there is no sign by which to foresee any serious renaissance near at hand."



FIG. 300.—Snuff-bottle; blue and white,
of Ch'ien-lung period



FIG. 301. Snuff bottle, mode etc. in high relief, and decorated in brilliant colors, Chien lung

CHAPTER XVII.

THE FORMS OF PORCELAIN OBJECTS AND THEIR USES IN CHINA.

THIS is a wide subject, on which there is opportunity here for only a few desultory remarks. An extensive collection of Chinese porcelain exhibits a long series of objects of multitudinous shapes and sizes, removed from their original habitat, and far from their usual surroundings, so that the proper use of some of the things can hardly be guessed by the uninitiated. Images of Buddhist and Taoist divinities, torn from their temple shrines, are grouped with profane figures, and sacred ritual vessels, intended for ancestral offerings of food and wine, are mingled promiscuously with common utensils of daily life. A seated representation, for instance, of Maitreya, the Buddhist Messiah, with rosary in hand, whose smiling features and luxuriant figure have earned him in France the traditional title of the Pousa or god of content and sensuality, is placed close to the reclining figure of Li T'ai-po, the celebrated poet, who has fallen, overcome with wine, and is embracing his capacious wine-jar, designed to hold water for the ink-pallet of a modern emulator of his genius. An ecclesiastical vase from a Buddhist altar, like the one of a pair, illustrated in Plate XX, should be distinguished from an ornamental flower-vase or a perfume-sprinkler; and a sacred libation-cup, or a cup designed for use during the marriage ceremony, from an ordinary wine-cup. Sweet-smelling flowers are highly appreciated by the Chinese, and we see perforated baskets of porcelain in which they are suspended before Buddhist altars, pierced cylinders and boxes for the table, and openwork flasks, fashioned in the form of scent-sachets, intended to be strung upon a lady's girdle, filled with blossoms of the scented jasmine or of the *Olea fragrans*. So one ought to be able to diagnose the use of an incense-urn or a joss-stick holder, to recognize a bowl for goldfish, a flowerpot, or a dish for flowering bulbs, an arrow-receptacle (*chien-t'ung*), or a brush-cylinder (*pi-t'ung*), the apparatus for a game of *gobang*, or a dice-box. The dice-box is a little round tray with a raised circular rim, within which fits the dome-shaped cover in which the dice are shaken; this is taken off to show the result of the throw. Cricket-fighting is another favorite pastime with the Chinese, and the curved hollow cellules with movable covers, in which the tiny champions are brought to the fray and incited to combat, are sometimes molded out of white biscuit porcelain, although ordinary *faience*, being more absorbent of water, is a better material for the purpose. The cricket naturally lives in damp places, and, in solitary captivity, is kept in an earthenware jar with a cover like an old-fashioned tobacco-jar, the lid of which is excavated to hold water. The cricket-bowls of ancient porcelain that we read of are of wide, shallow form, and are used as the arena of the fight.

The author of the *T'ao Shuo*, in the first chapter of his book, gives a brief sketch of the various kinds of objects made during the present dynasty, the outlines of which may be followed here with some amplification by the way. He begins with a list of the sacrificial vessels of bronze, dating from the Three Ancient Dynasties, that are now all made in porcelain, including the large vessels of varied form called *tsun*, the smaller vases called *lei*, from their scrolled designs, the tripod or four-legged bowls called *ting*, the bowls without feet (*yii*) for offerings of

PLATE LXXI
BLUE AND WHITE VASE WITH
SPORTING LIONS

OVOID VASE, of the Buddhist form, called Kuan Yin Tsun, because it resembles the ritual vase carried by the Goddess of Mercy, 18 inches high, decorated in shaded tones of brilliant blue, in the characteristic style and coloring of the K'ang-hsi period (1662-1722).

The body of the vase displays the grotesque forms of three lions of the traditional Chinese type, sporting with brocade balls, the wheel-like balls being tied with broad fillets, which fill in all the intervals with their spirally waving folds. The neck of the vase, marked with three ribs faintly worked in the paste, is painted in blue with an encircling band of "acquire-head" ornament above a light ring of spiral feet.

The mark underneath is a large double ring, pencilled in blue, such as frequently occurs at the time referred to, when the potters were forbidden to use the imperial title.

This decorative motive is always called Shih-tz'u k'un hsu chiu, "Lions sporting with brocade balls," and the lions, by a pun on the word shih, which also means "generation," are often said to be symbolical of three generations of the same family. The original ecclesiastical signification of lions guarding the sacred wheel of the Buddhist law seems to be quite forgotten, although one can almost detect the spokes of the wheel in the picture below.



PLATE 1271

Figure 1. A photograph of the specimen, showing the dorsal view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 2. A photograph of the specimen, showing the ventral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 3. A photograph of the specimen, showing the lateral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 4. A photograph of the specimen, showing the dorsal view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 5. A photograph of the specimen, showing the ventral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 6. A photograph of the specimen, showing the lateral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 7. A photograph of the specimen, showing the dorsal view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 8. A photograph of the specimen, showing the ventral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 9. A photograph of the specimen, showing the lateral view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.

Figure 10. A photograph of the specimen, showing the dorsal view of the head and the first few segments of the body. The specimen is a small, dark, elongated object, possibly a larva or a small insect, with a distinct head and segmented body.





corn, the wine-jars (*yu*), and the libation-cups (*chüeh*). The forms of the ancient vessels are not, however, always exactly copied, nor are the uses necessarily the same in modern times. The *ting* and *yu*, for example, which used to contain rice and millet, are now employed for burning incense, which was unknown in ancient China before the introduction of Buddhism; and the ancient vessels of bronze, fashioned in the form of an elephant or of a rhinoceros, in which the hollow body contained the wine, are now represented by the same animals, molded of solid porcelain, carrying on their backs capacious vases with movable covers. The forms of these are figured in the illustrated ritual books, and accompanied by a minute description of the different designs and dimensions.

Some idea of the variety of the sacrificial vessels may be gathered from an account of the tables set out for the ceremonial worship of the emperor at the T'ai Miao, the Ancestral Temple in the Prohibited City at Peking, to which he proceeds in state four times every year, to officiate as chief priest and preside over a banquet prepared for the spirits of his ancestors. A row of six libation-cups (*chüeh*) filled with wine is placed in front, followed by four tureens of yellow porcelain containing soup and broth, which include a pair of *têng*, tazza-shaped, with solid stem and spreading foot, and a pair of *hsing* with mask handles and three scrolled legs, all of which are provided with covers. In the center are four deep dishes, with spreading feet and shaped covers, made of wood, lacquered and gilded, filled with boiled rice and three kinds of millet, a pair of *fu* of oblong shape, and a pair of oval *kuei*.* These are flanked on either side by twelve stemmed bowls with covers containing all kinds of cooked dishes, sturgeon and minced carp, deer's sinews, minced hare and minced deer, sweetbread, pickled pork, etc., with cakes of different sorts, and fruit, including hazelnuts, water caltrops, the prickly water-lily (*Euryale ferox*), jujubes, and chestnuts; the twelve bowls (*pien*) on the right being made of closely woven slips of bamboo, lacquered yellow, the twelve (*ton*) on the left of carved wood, gilded. Next come three large oblong metal trays on separate stands with the meat offerings of a bullock, a sheep, and a pig. A box of woven bamboo, in front of all, holds rolls of undyed silk stuffs, which are burned so that the spirits of the deceased may be clothed as well as fed.

The *Wu Kung*, or set of five sacrificial utensils, which is never absent, is displayed in the foreground on a separate table, consisting of an incense urn in the center, with two pricket candlesticks and two side pieces. The last are changed at each season, a pair of rhinoceros vases (*hsi tsui*) being set out in the spring, a pair of elephant vases (*hsiang tsui*) in the summer, a cup-shaped pair of vessels (*chu tsui*) in the autumn, and a pair of plain ovoid vases with spreading lips (*ku tsui*) in the winter.

The ritual vessels for the Ancestral Temple are enameled yellow, that being the imperial color. It is also, in accordance with notions upon color symbolism, which the Chinese share with other ancient Oriental nations, the color of earth, so that the porcelain vessels for the Altar of Earth in Peking are also enameled yellow, as well as those used by the emperor in his worship of the patron god of agriculture, and by the empress in her worship of the patron goddess of silk, at their respective temples. Blue is the color of heaven, and its temple is roofed with tiles of sapphire tint, and the ritual vessels used upon the Altar of Heaven have to be enameled blue, as well as those used in the Temple of the Land and Grain, where the emperor offers annual sacrifices for a favorable harvest. Red is the symbolical color of the sun, and the ritual vessels of porcelain displayed upon its altar are still invested with that color, as they used to be in the days of *Hsüan-lé*, when the famous ruby-red, derived from copper, was first introduced for the altar-cups to hold the wine offered up by that emperor in the worship of the sun. White is the color of Jupiter, the Year Star of the Chinese, and is reserved for the sacred vessels used upon its altar.



FIG. 302.—Small Censer with openwork sides, on tripod of ivory-white Fuchien porcelain.

* One of these dishes, made of yellow porcelain, is figured by Granddier (*La Céramique Chinoise*, Plate II, 7).

Some of the Buddhist altar sets of five pieces (*wu kung*) that have just been referred to are noble specimens of the ceramic art. A similar set is often seen on Taoist altars, like that made by T'ang Ying for presentation to the Temple of Tungpa, near Peking, of which the inscription was given in Chapter IV.

The same sacrificial set of five pieces is displayed upon the domestic altar of larger Chinese houses, but in smaller houses one sees perhaps only a single censer, like the specimen of ivory-white Fuchien porcelain, illustrated in Fig. 302, which is inscribed underneath with the sacred *svastika* symbol. In other cases a tazza-shaped cup is placed before the sacred shrine, to hold a daily offering of fresh flowers, flanked by a pair of lions mounted upon pedestals, from which spring little tubes to hold the molded rods of fragrant sawdust, which are commonly called "joss-sticks" by foreigners, "joss" being the pigeon-English corruption of the Portuguese *Dios*. The burning of incense is an indispensable accompaniment of every act of worship. One of these lions (*shih-tz'ü*) is exhibited in Fig. 303, and the tube which holds the stick of incense is seen in the picture rising from the pedestal at the back. The lion figures in Buddhism as a protector of the faith. The tazza-cup is called *ch'ing shui wan*, or "pure-water bowl"; it may be replaced by a plain white bowl of ordinary form, and the beautiful "lace-bowls" of the reign of *Ch'ien-lung* are specially prized for the purpose.



FIG. 303.—Figure of a Lion mounted upon a pedestal, with a tube at the side for a joss-stick; ivory-white Fuchien porcelain.

Two other Buddhist vessels may be noticed here, the alms-bowl (Chinese *po*, Sanskrit *patra*), and the lustration vase (Chinese *tsao-p'ing*, Sanskrit *kundikā*), which every mendicant monk carried in olden times. The alms-bowl is of flattened globular form rounding into a small circular mouth. The lustration vase, intended for ceremonial ablution, is of more varied form; one of them is presented in Fig. 304 with a tall, curved spout springing from the monstrous head of a dragon, which is richly decorated with floral diapers and bands of conventional ornament, painted in colors of the *K'ang-hsi* period, relieved by a *tzu-chin* ground of "old-gold" tint. The older lustration vases are larger and of plainer form; sometimes they are elaborately worked in the paste, under a crackled glaze of the *Sung* dynasty, with dragons, frogs, fish, crabs, and all kinds of water plants—antitypes of the famous Palissy ware, which is ornamented in similar style.

There is another incense apparatus with no religious significance, which is provided as part of the furniture of every Chinese reception-room or library of any pretensions. The emperor is always represented as having one on the table before his throne, and it is a necessary part of the equipment of a scholar's study. This is the *San Shé*, or "Set of Three," which is so often seen mounted on stands in Chinese collections, carved in jade, rock-crystal, turquoise, *lapis lazuli*, and other precious materials, molded in bronze or silver, enameled in painted or *cloisonné* work upon metal, as well as in *faïence* and porcelain. The three pieces of this set comprise an urn (*lu*) for burning the chips of sandalwood or other scented material with the fumes of which the room is to be impregnated; a box (*ho*) with a cover to store the fragrant fuel ready for use; and a vase (*p'ing*) to hold the miniature tongs, poker, and shovel, made usually of gilded copper, with which the fire is kept up.

The Chinese *literati* are very particular in selecting their library apparatus and writing-tools, and a long series of scholars have published at different times a small library of books on the subject. For the writing-table there are porcelain pallets (*yen*); rests for the cake of ink (*mo chuang*); water-pots (*shui ch'êng*) of varied form, with tiny ladles of gilt metal or coral inside; water-droppers (*i-tzu*) of quaint designs, such as a tortoise or a three-legged toad distilling drops from its mouth, a lotus-pod, or a miniature wine-ewer; paper-weights (*chên chih*), a coil of dragons, a scantily clad urchin or gayly dressed girl reclining upon a leaf, or such like; hand-rests (*pi ko*) of oblong shape, with convex surface, to support the wrist when writing.

The pencil-brush (*pi*) of the writer or artist may be mounted in a porcelain handle (*pi kuan*); it has a bath (*pi hsi*), a dish in which it may be dipped and washed, which is often a specimen of ancient celadon, or of some other celebrated production of the older dynasties; "there is," according to our Chinese authority, "a bed (*pi chuang*) for it to lie down in, a rest (*pi ko*) for its support, the orthodox form of which is a miniature range of hills, and a cylinder (*pi t'ung*) for it to stand up in when not in use." The ancient seals (*yin*) of the *Han* dynasty, which used to be carved in jade or molded in copper, are now all copied in porcelain; they are of oblong form, surmounted by handles, fashioned in the form of a camel, a tortoise, an archaic dragon or tiger, a curved tile or two interlacing rings. Some of these seals have been dug up in Irish bogs, supposed to be of great antiquity, and a volume has been published on the subject.*

There are oblong plaques of porcelain, covered with written inscriptions, or decorated with pictures, in blue or white, or in colors, prepared to be mounted as panels in large leaf screens, framed in carved and lacquered wood; decorated porcelain panels for inlaying in an oblong wooden pillow, to provide a cool rest for the head in the hot season; hollow slabs of circular and oblong shape, with pictures painted on both front and back, to be inserted in the wood-work of beds, a round slab being placed at the head of the bed in the middle, succeeded by a series of oblong slabs, extending down the sides, and triangular mounts for the legs. Then there are porcelain mounts for the two ends of the wooden rollers attached to scroll pictures; porcelain handles for walking-sticks; sets of chessmen with boards, and other games, including a pair of bowls, of the traditional form of the Buddhist alms-bowl, for holding the black and white men for the game of *wei-ch'i*, the "miniature war practice" of the Chinese.

With regard to vases adapted for the display of cut flowers to decorate the reception-room or library, it would require a volume to describe all the varied shapes and designs. Archaic bronze forms alone, in which China is so rich, afford an inexhaustible series of models, as may be seen by a glance at the voluminous illustrated books on the subject, such as the *Po ku t'ou*, and the *Hsi ch'ing ku chien* catalogue of the imperial collection of the Emperor *Ch'ien-lung*, which have already been referred to. The older ceramic productions supply another suggestive source of inspiration, and according to the *T'ao Shuo*, select specimens of the *Ting-chou*, *Ju-chou*, crackled *Ko Yao*, and imperial porcelains (*Kuan Yao*) of the *Sung* dynasty, as well as porcelain vases of the celebrated reigns of *Hsüan-tê*, *Ch'êng-hua*, and *Chia-ch'ing*, and cloisonné enamels on copper, of the reign of *Ching tai*, of the *Ming* dynasty, are sent down from the palace, and gathered, besides, into the workshops at *Ching-tê-chên* from all parts of the empire for the purpose.

The same book describes porcelain vases generally as ranging in size from a height of two to three inches up to between five and six feet. In shape the *ku* are round, like the ancient earthenware vessels of that name; the *tun* are round and swelling below like the gall-bladder, from which their name is derived; the *tsun* are broad and round in section, with low body and expanding mouth, the *ku* of slender hornlike form, with vertical ridges on the body and trumpet-shaped mouth; these last two are archaic bronze forms, being varieties of what we, for some unexplained reason, call beakers.

There are two special works before us on flower-vases, both of which were published toward the end of the *Ming* dynasty in the beginning of the seventeenth century. The first, entitled *P'ing shih*, "History of Vases," is by *Yuan Hung-tao*, a famous scholar and high official who died in 1624, and whose biography, together with that of his two brothers, "The Three Yuan," as they were called by their contemporaries, is recorded in the *Ming shih* (or Annals). In his description of the forms he says:



FIG 304.—Illustration Ewer of Buddhist ecclesiastical form, painted in K'ang-hsi colors, relieved by an "old-gold" (*nü chun*) ground.

* *Notices of Chinese Seals found in Ireland*, by Edmund Getty, Dublin, 1850.

"Among the vases in private collections in the province of Kiangnan, the finest are the ancient beakers (*ku*) with trumpet-shaped mouths, invested with a bright azure-blue penetrating into the paste marked with patches of vermillion tint rising in slight relief; these may be termed golden halls for flowers. Next in rank come select specimens of the imperial potteries of the *Sung* dynasty, of the crackled Ko Yao, of the crackled white porcelain of Hsiang-shan, near Ningpo, and of the ivory-white Ting-chou ware; these, when slender and graceful in form and of rich luster, all make elegant vases for the study of the scholar. Vases for the decoration of the scholar's study ought not to be large and heavy, and any of the porcelain productions of the above factories, such as the vases shaped like paper-beaters, those with goose-necks, those fashioned in the shape of aubergine fruit, the flower bags or baskets (*hua nang*), the flower-beakers (*hua tsun*), the receptacles for divining-rods, and the bulrush-shaped—any of these that are short and small are suitable for chaste decoration."

The other book, called *P'ing hua p'u*, is a treatise on vases and the methods of arranging flowers in them, by Chang Ch'ien-t'ê, a son of the author of the *Ch'ing pi tsang*, an antiquarian work that has already been quoted, and for which he wrote a preface dated 1595. He says:

"In the art of floral decoration the first requisite is the selection of the vases. In spring and winter they should be of bronze, in summer and autumn of porcelain, on account of the variations of temperature. The larger ones are placed in the reception-hall, the smaller in the library, on account of exigency of space. Bronze and porcelain are preferred to gold and silver, as harmonizing better with the simple tastes of a scholar. Rings and pairs are to be avoided, and special attention is to be given to rarity and beauty. The mouth of a vase should be small and the foot thick, so that it may stand firmly and not emit unpleasant vapor."

The last paragraph recalls a favorite shape of the *Ming* dynasty, slender below, enlarging upward to a wide, bulging shoulder, and finally rounding into a small, narrow neck; this is the *mei p'ing* or "prunus vase" of the Chinese, who consider the form appropriate for the display of blossoming branches of the *mei hua*, the winter plum; in American auction catalogues it is often called a "gallipot," for some reason not clear to the uninitiated. Gourds are considered most suitable for the display of lotus-flowers, bulrush-shaped vases for peony-blossoms. The Chinese never arrange flowers in mixed bouquets; a spray or two of bamboo may be put with orchids, or a few blades of reed or other water-plant with lotus-blossoms, that is all. The festivals of the four seasons must be celebrated by a lavish exhibition of their floral emblems, the spring peony, the summer lotus, the autumn chrysanthemum, and the winter prunus. Each month of the year, too, has its distinctive flower, which the florist is expected to produce for his patrons in due rotation, as well as to provide a supply of cut flowers for other calendar holidays and festive occasions.



FIG. 305.—Snuff bottle. Gray-blue crackle of the K'ang-hsi period. Mark, Ch'eng-hua nien (11).

Next to vases for cut flowers we come to flowerpots for growing plants, which are always pierced in the bottom with one or more holes, and are often provided with saucers. Some of the smaller ones, intended for interior decoration, are finely modeled and elaborately painted in colors. The ancient Ch'ün-chou flowerpots, in their brilliant red coats of richly varied transmutation tints, rank as the most valued treasures of the Chinese connoisseur. The larger flowerpots, which are intended for the veranda and balcony, are also of varied form and design, being round, square, or polygonal, barrel-shaped, or like a miniature tank with rolled sides, and in other cases simulating the trunk of a tree or some grotesque monster. The large dragon fish-bowls (*lung kang*) that are placed on wooden stands in Chinese gardens or courtyards and filled with lotus-plants or with goldfish have been often referred to. Smaller bowls (*yü kang*) of the same shape are made for keeping goldfish in rooms, and are often decorated in the traditional way with dragons; others are made in the shape of the Buddhist alms-bowl as flattened globes with small circular mouths, the most attractive of which, perhaps, are the white bowls in which the sides have been pierced with geometrical lacework patterns and filled in with transparent glaze, giving a charmingly light effect as they stand on a side-table in front of the window. The shaped dishes of foliated outline mounted upon low, scrolled feet are for the cultivation of narcissus flowers, which it is the ambition of every Chinese householder to have in full blossom upon New Year's day; the bulbs are supported in the dish by a layer of pebbles and kept watered. A circular dish of plainer form is generally

PLATE LXXII.

WAN-LI BLUE AND WHITE
VASE

TALL VASE (Hua-Ku), 33 inches high, of archaic form, with six prominent serrated ridges projecting vertically from the bulging center, and extending down to the gently spreading foot, and two handles fashioned in the shape of grotesque lions' heads, channelled for rings, on the neck. It is painted in cobalt-blue of characteristic tone, under a rich lustrous white glaze slightly tinged with blue.

The decoration consists of conventional scrolls of peonies arranged in vertical panels. A band of ten waves stretches round the base, two undulating rings of foliated scrolls define the borders of the body, a band of sacred ling-chih fungus winds round the shoulder, and two horizontal bands of conventional ornament mark the borders of the neck. Inside the mouth there are two encircling bands of formal flowers, succeeded by a ring of palmated design pointing downwards.

The mark, inscribed in a framed panel near the upper border, is "Ta Ming Wan li men chih—i.e., "Made in the reign of Wan-li (1573-1619) of the Great Ming [dynasty]." The bottom is unglazed.







seen upon one of the tables at the same time piled up with a heap of Buddha's-hand citrons or fragrant melons to perfume the air; the large *Yung-chêng* dishes, of which one is illustrated in Plate XLVIII, are used in the palace for this purpose, and a still more choice receptacle for the fragrant fruit is a dish of old Lung-ch'üan celadon, or of some other kind of ancient porcelain of the *Sung* dynasty.

Many other objects are made of porcelain for the reception-room: Barrel-shaped seats (*Tso-tun*); slabs of rectangular or circular shape for insertion in the tops of tables and benches; hanging baskets with pierced sides for flowers, hanging lamps (*kua-têng*) of eggshell thinness, or with openwork panels, like the two beautiful examples illustrated on these pages; and all kinds of boxes and cabinets of varied shape and design.

Three characteristic forms of the floral receptacles with pierced openwork sides through which the fragrance of the flowers is diffused throughout the room, are shown here. Fig. 306 is a hanging basket decorated in enamel colors, with gilding of the *K'ang-hsi* period, with floral band near the rims, and the sides painted in black, green, and yellow to simulate wicker. The cylinder which fits inside is painted in coral-red with scrolls of lotus and a ring of spiral fret.

Fig. 307 shows a basket-shaped bowl, with a cover surmounted by a lion, decorated in *K'ang-hsi* colors. The handle is painted in black lines upon a yellow ground to imitate basket-work. The sides are pierced in six panels of hexagonal trellis interrupted by chrysanthemum-flowers alternately red and light purple, and the cover has a similar openwork design. The borders are painted with scrolls in red. The perfume globe, *hsiang ch'in*, in Fig. 308, is of light biscuit porcelain inlaid with *K'ang-hsi* colors, a brilliant green in combination with the usual enamels of the old *famille rose*. The pierced medallions contain alternately peony and lotus flowers. It has a tiny round cover for the introduction of the flowers, and is strung with a silk cord, although it would usually stand on the table. It is fashioned in the likeness of one of the globular gourds which are often carved in openwork as receptacles for fragrant flowers, as cages for singing cicadas, or to carry fighting crickets in safe custody inside.

There must always be a pair of hat-stands (*mao chia*) on one of the side-tables for visitors' hats, which are kept on the head during calls of ceremony, but are allowed to be taken off on less formal occasions; these are often made of porcelain and vary very much in form. M. Grandidier describes an elaborate *porte-calotte* exhibited in his collection in the Louvre, consisting of a sphere supported by a long tube, to which it is buttressed by branches of foliage, mounted upon a lobed stand with trefoil feet, the globe being hollow so as to hold fire or ice, according to the season, for the purpose of warming or cooling the hat. Another not uncommon design has a little box supported upon long, curved spindle legs with a perforated lid, adapted to hold a scent *sachet* or a few chips of sandalwood.

Having disposed of objects of utility, we come to those intended solely for decorative purposes. To this class belongs the great majority of the vases and jars seen in Oriental collections. Their function is purely ornamental, although in form they are lineal descendants of the flower-vases, the wine-receptacles, and the jars with covers for storing preserved fruits and dried tea-leaves, that were made for actual use in earlier times.

An ornamental group or set of five pieces is often seen arranged in line on one of the long side-tables of the Chinese reception-hall. This is the *Wu Shê*, or "Five Set," and it may be either of a single color, or decorated in one or several enamel colors, or painted in blue and white. It consists of a vase (*ping*), in which the mouth is less in diameter than the body, placed in the middle, a pair of jars (*kuan*) with covers on each side of the central vase, and a pair of beaker-shaped vases (*ku*), with flaring mouths wider than the bodies, at the two ends of the line. This arrangement differs from that of the *garniture de cheminée*, or "mantelpiece



FIG. 306. Hanging Basket with pierced sides, painted in enamel colors, with gilding of the *K'ang-hsi* period.

set," of European collections, which is also composed of five pieces of similar design displayed in line, but the central vase of the Chinese set is missing, its place being usurped by a third covered jar; two other jars are placed at the ends of the line, and the pair of beakers between the jars. This was the conventional "garniture" of the Dutch in their interiors of the sixteenth and seventeenth centuries, in which the Oriental porcelain lighted up the old oak furniture, and gathered an added brilliancy contrasted with its dark setting. These were ideal surroundings for the lustrous blue and white porcelain of the *K'ang-hsi* epoch, and it could hardly be exhibited anywhere under greater advantages.

One of these *garnitures de cheminée* has been photographed for Fig. 213. It is decorated in bands and panels of varied form painted in bright enamel colors with gilding, relieved by a monochrome *tai-chin* ground of coffee-brown tint. The ground is interrupted by encircling bands and lambrequins of floral brocade, by blossoms of peony, aster, peach, and plum, and by scrolled and foliated panels filled with pictures of landscape scenes with temples and pagodas. The covers of the jars, enameled with the same brown ground, have leaf-shaped reserves painted with peony-flowers. The peculiar style of decoration is commonly known in Europe as "Batavian," the Dutch having imported it so largely in the last century, during the time that they were the chief merchant-carriers from the far East.



FIG. 307.—Covered Bowl with enamel panels on the sides; decorated in colored enamels of early *K'ang-hsi* date.

The magnificent ovoid vases, five feet in height, with bell-shaped covers on the top, which made their first appearance toward the end of the reign of *K'ang-hsi*, gorgeously decorated in colors of the *famille rose*, are called by the Chinese *ti ping*, or "ground vases," their place being on the ground at the sides of the entrance of the hall, mounted upon low stands of carved wood. In Europe they are seen occasionally on the grand staircase of a palace, supporting branched chandeliers of ormolu.

A peculiar shape of the reign of *K'ang-hsi* is the *chien t'ung*, or "arrow cylinder." The Manchu Tartars have always been famous for their skill in archery, and even in the present day the military officer depends on it for his promotion. The arrow receptacles are either tall cylinders, or of square tubular form, and are mounted in socketed pedestals of the same material surrounded by an openwork railing. They are very richly decorated in the brilliant enamel colors of the period, combined with relief molding and chiseled openwork, as exemplified in the characteristic specimen in Fig. 313.

The small vases with thin necks tapering upward to a contracted orifice, like the pair of which one is presented in Fig. 309, are perfume sprinklers (*hsiang shui ping*). This pair, which came from the collection of a Persian prince, uncle of the Shah, had been mounted in that country with metal, and doubtless used there for sprinkling rose-water, the favorite scent of the Persians. The porcelain is, of course, Chinese, and it is decorated in the characteristic style of the *K'ang-hsi* period with a powder-blue ground, interrupted by three reserved medallions of quatrefoil, pomegranate, and fan shape, which are lightly penciled in underglaze blue upon a white ground with wild flowers growing from rocks.

The smallest vases of all are the snuff-bottles (*yen hu*), one or two of which are generally laid upon the small table that stands on the divan of a Chinese reception-room, with little ivory spoons attached to the stoppers inside, to ladle out the contents. The tobacco plant is indigenous to America, and there is no reason for doubting that it was introduced into the Far East by Spanish or Portuguese ships at about the same time that it reached Europe. In fact, the Chinese Emperor *Wan-li* (1573-1619) vied with his contemporary, James I of England, in fulminating edicts which he issued against the new weed, that was then just coming into vogue in China. It flourished, notwithstanding, and in the present day it is cultivated throughout the empire and smoked alike by man, woman, and child. But the little bottles seem to have been made in China before the introduction of snuff, and the apparent anachronism is

due to the fact that they were originally intended to hold valuable aromatics or rare drugs, which is proved by their old name of *yao ping*, or "medicine-bottles." Glass bottles are now gradually coming into use for the purpose, but old-fashioned druggists still send out their pills in the little porcelain flasks. The itinerant medicine-venders often have a supply of these little flasks made to order, with their professional name inscribed on one side, and perhaps a quaint superscription on the other, like *ch'i tai* or *pa tai*, "seven generations" or "eight generations," to indicate that the secret formula has been a hereditary possession for so long a period. Before the Portuguese ships appeared in the Indian Ocean and interrupted the traffic, Chinese junks visited the coasts of Africa and Arabia, and seem to have taken a quantity of these medicine-bottles of coarse fabric and rough manufacture to store the precious aromatics which formed the most valuable part of their cargo. Little bottles of the kind are found to-day in Cairo, and their fraudulent introduction into ancient tombs by the Arab workmen has led some to claim for them a fabulous antiquity, after Rosellini,* who describes one as having been "found by him in an Egyptian tomb which had never been opened before, and the date of which belonged to a Pharaoh reigning not later than the eighteenth century before Christ." Their false pretensions have been long ago exposed by Sir Walter Medhurst and Sir Harry Parkes, in the Transactions of the China Branch of the Royal Asiatic Society, and need hardly have been alluded to here, had one not seen a row of the so-called snuff-bottles exhibited among true Egyptian antiquities in the Abbott Collection in New York, and found Dr. Prime boldly claiming, in his book on the *Pottery of all Times and Nations* published in 1879, an age of a thousand years for three snuff-bottles in his own collection, obtained by him from Arabs at Thebes and Cairo.

There is a peculiar attraction in Chinese snuff-bottles, and I have seen three envoys of great European powers at Peking vying with each other in the acquisition of rare specimens. They are made of many other materials besides porcelain, such, for example, as cameo-glass, jade, rock-crystal, amethyst, carnelian, chalcedony, heliotrope, sardonyx, chrysoprase, turquoise, agate, *niellé* bronze, damascened iron, painted and *cloisonné* enamels, carved cinnabar lac, etc. Several pamphlets have been written on the subject, the latest of which is the beautifully illustrated contribution, under the title of *Chinese Snuff-Bottles* by Mr. M. B. Huish to the Opuscula of the Odd Volumes Sette, of which, unfortunately, only one hundred and forty-nine copies have been printed, the circulation being limited to Odd-Volume members.

Of the porcelain snuff-bottles several of quaint form and cunning device have been selected for some of the head-pieces for these pages, and Plate XXXVII is specially devoted to their illustration. The collection exhibits, in epitome, many of the different processes of decoration, including single colors plain and crackled, painting in blue, red, and in many colors, relief modeling and openwork carving in those provided with a pierced outer casing. The different forms of larger vases are reproduced in miniature, single or bijugate; there are flasks upright and recumbent, gourds of all kinds, trellis designs, and basket wickerwork. One little bottle simulates a bursting cob of maize, another the fruit of the eggplant, a third is fashioned, as it were, of two lotus-leaves joined together, a fourth of a pair of butterflies. A quaint form is that of a Chinese damsel whose inverted body is the receptacle for the snuff, while one leg is hollowed for the spoon, which is cemented to the tiny porcelain foot that is made to officiate as the stopper of the strange bottle.

The civil mandarin may have the one hundred and eighth bead of his official rosary, or the clasp of his girdle, made of porcelain; the military mandarin, the broad ring which protects his thumb against the bowstring, or the little tube which is attached to the top of his hat to hold



FIG. 368.—Pierced Globe of delicate K'ang hsi porcelain, decorated *sur des couleurs* in enamel colors.

* *I Monumenti dell' Egitto*, etc., vol. ii, p. 337. Pisa, 1834.

the streaming peacock's feather. Chinese ladies are said to possess in their inner apartments boxes, large and small, for holding powder, rouge, and other cosmetics, in which they indulge so freely, as well as bottles for liquid scents; they occasionally wear in their headdress elaborate hairpins of porcelain, they adorn themselves with earrings and bracelets, fasten their robes with porcelain rings and buttons, and attach ornamental pendants to their girdles. Some of these things are very delicately decorated. There is a certain badge worn at religious ceremonies which often finds its way into collections; it has inscribed on one side the Chinese characters *chai chieh*, "fasting and abstinence," inclosed within an ornamental frame, and on the other side the same motto in the Manchu script; it may be of oblong or oval form, or shaped like a double gourd.

The pretty little vase-shaped receptacle in Fig. 314, with globular body and wide-spreading neck, is an imperial hand-spittoon (*cha-lou*). It is decorated in two shades of coral-red with a pair of five-clawed dragons pursuing pearls in the midst of clouds, a band of conventional flowers, and rings of gadroon and spiral fret. It may be referred confidently to the *Ch'ien-lung* period, although there is no mark underneath. A pair of taller vessels of the same form are usually seen on the toilet-table in a Chinese room, perhaps with a toothbrush standing up in one; they take the place of glass tumblers with us.

Our Chinese guide proceeds next in the *T'ao Shuo* to give a brief enumeration of the porcelain services and other things made for the dining-room. He begins with rice-spoons, teaspoons, and the chop-stick service. The latter consists of a pair of chop-sticks for each guest (which he uses in lieu of knife and fork) and a number of little saucer-shaped dishes of varied form, some empty, for the guests to lay their chop-sticks on, or to use as they help themselves from the bowls that are being constantly brought in courses of four or eight plats; others dotted about the table filled with melon-seeds, peach-kernels, nuts, and sweetmeats. The "dragcoirs," or comfit-dishes, are sometimes modeled in the form of a large lotus-flower or plum-blossom in movable compartments, so that they can be taken to pieces to form separate little dishes for the dining-table. Comfit dishes of this floral or geometrical design, dating from the reign of *K'ang hsi*, are often very richly decorated, being enameled *sur biscuit* with graceful scrolls of the same flower, displayed upon a bright green or buff-colored ground.



FIG. 309. — Perfume Sprinkler, powder blue ground with reserve panels, penciled in underglaze blue; Persian metal mounts

The different kinds of bowls, teacups, wine-cups, dishes and platters have been already referred to, and it is not necessary to describe all the various forms of teapots and wine-ewers. The tall ewers of cylindrical shape with tiara-fronted tops, like that in Fig. 168, are used by the Chinese for iced fruit-sirups; the Mongols are fond of the same design for their *koumis* or milk-wine ewers, which are made of bronze or silver. The ordinary wine-cups of the Chinese are small, sometimes not larger than thimbles; marriage wine-cups are of more elaborate design; sacrificial libation-cups are molded in the form of bronze ritual-vessels with hieratic designs. For the dining-table there are also vinegar-cruets, oil-lamps, pricket candlesticks, and square receptacles for the snuff from the candles (*la tou*), made of porcelain. For daily use there are wash-basins, pots, and pans, and jars of manifold form and capacity, which need not be minutely described.

Some of the dinner services used for sending out dinners from restaurants are of very elaborate character, the covered dishes being molded in the form of ducks, fishes, and the like, so as to indicate the nature of their contents.

White services, decorated with arabesques and other designs incised in the paste under the glaze, are intended for use during mourning. Imperial mourning-bowls are etched with five-clawed dragons under the white glaze.

PLATE LXXIII.
K'ANG-HSI BLUE AND WHITE
VASE.

VASE (P'ing), of gracefully elongated ovoid form, decorated in brilliant blue, in the style and coloring of the best K'ang-hsi period (1662-1722).

The picture represents, apparently, a dramatic scene. A traveler in official dress is boating in the foreground on a river-bank, to which the boat is moored from which he has just landed, his umbrella and bundle thrown on the ground near. A martial figure stands in front with his hand upon the hilt of his sword, the hero of the piece, indicated by the long pheasant-plumes in his helmet, who is attended by two soldiers armed with long halberds. The background is filled in with rocks and weeping willows, enveloped in clouds of misty blue. The neck of the vase is painted with a few light sprays of bamboo.

The mark underneath, penciled in blue within a double ring, of Ta Ming Chia ching nien chü, "Made in the reign of Chia-ching, of the Great Ming [dynasty]," is evidently fictitious.



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1771







FIG. 310.—Ivory-white Vase of Fuchien ware, with a dragon molded on the surface in saillant relief

CHAPTER XVIII.

PECULIAR TECHNICAL PROCESSES.—CRACKLE PORCELAIN.—FURNACE TRANSMUTATIONS.—SOUFFLÉS.—LAQUE BURGAUTÉE.—PIERCED AND "RICE-GRAIN" DESIGNS.—WHITE SLIP, ETC.

BEFORE proceeding to a consideration of the colors and the motives of decoration of Chinese porcelain, a few words may be said on certain characteristic technical processes of their ceramic art. Some of the peculiar methods referred to have been successfully imitated in Japan, as well as, more recently, in Western countries, but they were all first invented in China, the original country of the art.

Crackle porcelain is one of the most peculiar productions of the Oriental potter, and has not been successfully imitated elsewhere. Several of the most ancient wares are distinguished by their crackled glazes. There lies on the table before me at the present moment a collection of potsherd fragments of bowls and dishes dating from the *Sung* and *Yuan* dynasties, recently dug up within the precincts of the city of Peking, which are all crackled. The glaze has been laid on so thickly in some of these ancient pieces that it is actually thicker than the underlying paste, accounting so far for the hackneyed native simile of "massed lard." It ranges in color through all shades of purple to the pale cerulean tint known as *yueh pai*, or *clair de lune*, and has its lustrous depth traversed by an infinity of lines so as to look like fissured ice. The Chinese collect such fragments of old vessels, when the color is sufficiently attractive, to mount them in girdle clasps, or to frame them in gilded metal for use on the study-table as rests for the wrist of the writer, etc. An old legend declares that the azure-tinted porcelain of the ancient Imperial House of Ch'ai, which flourished in the tenth century, was so brilliant that a fragment placed in front of the helmet of a warrior would even deflect the course of an arrow.

There are two varieties of the old celadon porcelain made at Lung-ch'üan during the *Sung* dynasty which differ in the glaze, one being uncrackled, while that of the other was crackled. The invention of this last was attributed, as we have seen in Chapter V, to an elder brother of a family of potters named Chang, and it was from this fact that it first came to be known as *Ko Yao, ko* meaning "elder brother." Another common name for crackled porcelain is *sui ch'i, sui* meaning "broken," or "shattered in pieces." This name, derived from the mosaiclike aspect of the glaze, looking, it was said, as if the porcelain were made of a thousand separate pieces cemented together, also dates from the *Sung* dynasty, when it was applied to the crackled porcelain produced at Chi-chou, in the province of Kiangsi. This is described in the old books as resembling the ancient *ko yao*, both in color and in being reticulated with lines like fissured ice. Descriptive names of crackle that are often met with are *ping-ieh*, "fissured ice," which is applied to the coarser variety, and *yü tsü*, "fish-roe," which is applied to the variety with a closer crackled network that is called by French ceramic writers *truite*, on account of its fancied resemblance to the fine scales of the trout.



FIG. 311.—Snuff bottle with green and white dragon mark, Tao-kuang.

Crackling, as has been explained in Chapter XV, is due to a physical cause. It may happen accidentally in some pieces during the firing of a European furnace, although it is then considered to be a defect. Its production in China even was doubtless originally accidental; but it had to be produced artificially in the imitation of the old glazes which exhibited this peculiarity, until finally the Chinese potter was enabled to produce it at will. The crackled glaze in the present day, according to the *Ching-tê-chên T'ao lu*, is prepared from a natural rock found at San-pao-p'êng, from which place it is brought to the manufactory in the form of prepared bricklets called *sui ch'i tun*, or "crackled-ware bricklets." These, when finely levigated,

produce the ordinary crackled glaze; when they are roughly washed the crackled lines appear at larger and wider intervals. In the old crackle of the *Sung* dynasty, made at Chi-chou, the porcelain, which was heavy, thick, and of strong, coarse texture, was coated with glazes of two colors, either rice-gray or light blue. The mosaic-like crackled lines were produced by the addition of *hua-shih*, or steatite, to the materials of the glaze. When ink or vermilion was rubbed in, and the superfluous rubbed off after the piece was finished, a charming network of fissured lines appeared of subdued black or red tint.

There was another variety of crackled porcelain produced at the same manufactory in which a decoration in blue was added to the grayish-white crackled ground, being painted on the raw body before the application of the glaze. Specimens of archaic-looking crackle roughly decorated in blue, generally with dragons, are found in the present day in Borneo and other islands of the Eastern Archipelago. They are highly prized by the Dayaks and handed down in families as heirlooms. Some of them may date from the *Sung* or *Yuan* dynasties, like the plain crackled ware with which they are associated. The little tripod censer in Fig. 66, although it may not perhaps be so old, is a good illustration of the style.



FIG. 319.—Vase decorated with a landscape in blue under a white glaze, overlaid with variegated splashes of *flambe* glaze

There is another kind of crackled porcelain of more modern date than the last, in which the surface, originally white, is tinted pink or crimson. It is represented by comparatively small pieces, such as vases a few inches high, teacups, and the like, and the surface is usually finely crackled, or *truitée*. The color is produced by *yen-chih hung*, or *rouge d'or*, combined with a flux, and is the same as that employed for the celebrated ruby-backed dishes. The crackled piece, after it has been fired, is placed in a little cage or netting made of iron wire and heated strongly in a coal fire; it is then removed, and the color, suspended in water, is blown on the heated surface with the usual bamboo tube covered with gauze; it produces immediately the effect desired, and requires no further firing.

Crackled porcelain may also be decorated in enamel colors, which are fixed in the ordinary way by a second firing in the muffle stove, and some very beautiful bowls of the *K'ang-hsi* period illustrate this combination. The style and technique of the colors fix the date, if the bowl be not marked, with a certainty that could hardly be attained by an examination of the crackled glaze alone. A striking example in the present collection is the statuette of Kuan Yin, the Goddess of Mercy, which is reproduced in colors in Plate LX.

With regard to the crackled glaze in single colors, which include some of the most attractive of Chinese monochromes, they are well represented in the colored plates. The Chinese potter claims to be able to crackle any one of the monochrome glazes by introducing some of the *sui-ch'i tun*, or "crackle petuntse," into the ingredients. Some of the single colors, however, such as the coral-red produced by iron, and the *rouges d'or* of pink and ruby shades, are never in actual practice so treated. These colors are so delicate as to require no extrinsic adornment to add to their charm. Some others of the monochromes, on the contrary, are always crackled,

such as the turquoise-blue derived from copper, and the aubergine purple of cobaltiferous manganese, both *couleurs du demi-grand feu*. Turquoise crackle in its varied shades is fully illustrated in Plates XCIII, LXXXIV, XLV, and LXXV; and a magnificent vase of finely crackled purple blue of deepest and richest tone is presented in Plate XXIX.

Several of the early ceramic productions of the *Sung* and *Yuan* dynasties are distinguished by their crackled glazes, like the two pieces illustrated in Plate XII. It was during his repeated attempts at the reproduction of such ancient pieces that the modern Chinese potter acquired his skill in the management of crackle. The modern representation of the old *clair-de-lune* crackled glaze of Ju-chou is the vase illustrated in Plate LXXVII, with its glaze of the color technically known as *ju yu*—i. e., "Juchou glaze"—varying from pale blue to gray, traversed by a reticulation of reddish lines; the representative of the purple-colored imperial ware (*kuan yao*) of the southern *Sung* dynasty is the crackled lavender vase in Plate XLIII, with its brown-tinted mouth and its foot brown paste of the original model. *Fên Ting* vases exhibited in Plates date from early in the present dynasty, from which they take their name; the crackled grayish-green representative of an ancient celadon.

The most brilliant of all the of the reign of *K'ang-hsi*, already *sang-de-boeuf* of ceramic connoisseurs, highest achievements of the Oriental of mingled tones of crimson and vases, selected from the series in the LIX, LVII, I, and LVI. The largest haps, is the vase in Plate LIX, of the glaze, the stippled ground, rich colors, passing from the deep-ate shades to pale apple-green vase in Plate LVI and the beaker tones of red, deepening in the the shoulder of the vase. But a bottle-shaped vase in Plate LVII, technique, could hardly be im- base the typical patch of often associated with the sional vase of the Lang yao crackled glaze is entirely ap- with perhaps a patch of red

The green mono- lain are generally produced being the celadon proper, tint of which is due to ferruginous clay, and the modern representatives of the old Lung-ch'üan celadons, which are brought to a more pronounced grass-green or olive-green hue by the addition of a small dose of cobalt to the ingredients of the former glaze; any of these celadon glazes may be purposely crackled. A brilliant green derived from copper is the leading note in the decoration with colored enamels of the *K'ang-hsi* period, and the same color appears naturally in the foreground among the monochromes of the time. It is distinguished by its marked iridescence, a quality which is displayed in a high degree by the vase illustrated in Plate LXXIX. The vases in Plates LXXXI and LXXXVIII are invested with crackled green enamels of two of the shades comprised by the Chinese under the name of *kua-pi lü*, or "cucumber-green,"



FIG. 313.—Tall, Rectangular Arrow Receptacle, mounted in a socket pedestal, exhibiting relief and openwork modeling, and a rich decoration in enamel colors of the *K'ang-hsi* period.

artificially coated to simulate the In a similar fashion the crackled white LXXXIX and XCI, both of which nasty, are the representatives of the lain made at Ting-chou in the *Sung* name; and the crackled grayish-green sentative of an ancient celadon. crackles is the celebrated Lang-yao described in Chapter X, the original which ranks deservedly among the potter. Its gorgeous mottled dress ruby shade can be seen in the four collection, to be illustrated in Plates and most characteristic example, per- which shows the crackled texture and the vertically streaked play of est crimson through all intermedi- toward the rim. The tall, graceful in Plate I both exhibit rich, full latter case almost to black upon more perfect example than the in its rich coloring and finished agined, and it displays near the apple-green which is so ox-blood red. An occa- type is seen, in which the ple-green (*p'ing-kuo ch'ing*), near the lower rim.

chromes of Chinese porce- by copper, the exceptions or *tung-ch'ing*, the sea-green

which is fairly distinctive, although other names are used in European books, such as "camellia-leaf green," or "apple-green." The last term ought, I think, to be confined to the pale green so often found upon porcelain, associated with the "apple-red," which is also due to copper; the same dual combination that occurs curiously on the rind of a ripe apple. The fourth vase of green crackle, illustrated in Plate XXVII, is a typical example of the "fish-roe green" (*yü-tsü-ch'ing*) of the Chinese, which, like its congener, the *truite* yellow or mustard crackle, was a favorite glaze of the *Ch'ien-lung* period. A fine specimen of this *yü-tsü huang*, or "fish-roe yellow," of the Chinese, is displayed in Plate LXXXVII.

The discussion of transmutation colors succeeds that of the ordinary crackled porcelain by natural transition, because they attain their most brilliant effect in combination with a crackled glaze. The name of "furnace transmutation" is a literal rendering of the Chinese term *yao pien*, which is applied especially to the *flambée* porcelain of variegated coloring, due to different degrees of oxidation of the copper silicates to which it owes its brilliant hues, passing from the warmest crimson through all intermediate shades to turquoise-blue. It is difficult to depict in words the gorgeous effect of the varied play of colors in this decoration, which is justly considered to be one of the most marvelous products of the Orient. The cause of this transmutation is well known. Copper in its first degree of oxidation gives to the vitrified glaze the bright ruby-red tint known to the Chinese as *chi hung*, or "sacrificial red"; with more oxygen it produces a brilliant green, and at its highest degree of oxidation a turquoise-blue. Any of these effects may be produced in the chemical laboratory. In the furnace the various modifications are produced suddenly by the manipulation of the fire. In a clear fire with a strong draught all the oxygen is not consumed, and is free to combine with the metal in fusion. If, on the other hand, the fire be loaded with thick smoke, the carbonaceous mass will greedily absorb all the free oxygen, and the metal will attain its minimum degree of oxidation. So, when placed in a given moment in these various conditions by the rapid and simultaneous introduction of currents of air and sooty vapors, the glaze assumes a most

picturesque appearance; the surface of the piece becomes diapered with veined and streaked colorations, changing and capricious as the flames of spirits; the red oxide passes through violet and green to the pale blue peroxide, and is even dissipated completely upon certain projections, which become white, and thus furnish another happy fortuitous combination.

The transmutation glazes are of ancient date in China, some of the Chün-chou porcelains of the *Sung* dynasty being of this class. The name of *Lo kan ma fei*—i. e., "mule's liver and horse's lung"—was, in fact, invented as descriptive of the mingled colors of one of the varieties of Chün-chou vases which was sent down from the palace in the reign of *Yung-ch'eng* to be copied at Ching-tê-chên. The name was well chosen, suggesting, as it does, what has been described by an expert* as the mixture of red, blue, violet, and yel-

lowish green, flowing over the porcelain like a kind of lava of blood, lungs, and liver, chopped up and melted into enamels. The idea of liver-colored would suggest brown as well, and we often, indeed, found this color present in the old *flambé* glazes, due doubtless to the presence of iron. The occurrence of yellow and brown spots on certain *flambés* is always a sure indication of the existence of iron.

Père d'Entrecolles, in his second letter dated in 1722, the last year of the long reign of the Emperor *K'ang-hsi*, writes: "There has just been brought to me one of those pieces of porcelain that are called *yao-pien*, or 'transmutation.' This transmutation occurs in the furnace, and is caused either by some defect or excess in the firing, or perhaps by some other causes which are not easy to conjecture. This piece, which was a failure, according to the workman,



FIG. 374.—Small Vase of Ch'ien-lung imperial porcelain, decorated in two shades of coral-red

* *La Porcelaine*, par Georges Vogt, p. 23.

and which was the effect of pure chance, was none the less beautiful nor the less highly prized. The workman had designed to make vases of red *soufflé*. A hundred pieces had been entirely lost; the one alone of which I am speaking had come out of the furnace resembling a kind of agate. If one were willing to run the risk and the expense of repeated trials, one might discover, as the result, the art of making with certainty what chance had produced a single time." The words of the worthy Father are prophetic, for it was early in the succeeding reign of *Yung-chêng* that the art was verily discovered and rapidly brought to perfection; the best pieces of this class are rarely marked, but the rare marks are seals of *Yung-chêng* and *Ch'ien-lung*, which are sometimes impressed in the paste underneath.

The process described above may be characterized as the academic transmutation method. In actual practice the result is often aimed at in a more artificial way. The piece, coated with a grayish crackle glaze, or with a ferruginous enamel of yellowish-brown



FIG. 315.—Cylindrical
Beaker of *laque bur-
gante* of the K'ang-
hsi period

tone, has the transmutation glaze applied at the same time as a kind of overcoat. It is put on with the brush in various ways, in thick dashes not completely covering the surface of the piece, or flecked on from the point of the brush in a rain of drops, etc. The piece is finally fired in a reducing atmosphere, and the air, let in at the critical moment when the materials are fully fused, imparts atoms of oxygen to the copper, and speckles the red base with points of green and turquoise-blue, so that the glaze becomes vitrified into the characteristic variegated hues as it gradually cools. An inspection of the pieces will indicate the various methods of application.

The hexagonal vase, for example, illustrated in Plate

LXXXVIII, has a crackled glaze of olive-brown tint overlaid with thick splashes of *flambé* glaze, which have run down in the kiln in massive drops, so as to stand out on the surface of the vase in marked relief. The receptacle for divining rods in Plate XXIII, which is a more modern piece, with a thinner glaze, also indicates, from the association of olive-brown with the mottled grays and purples which bedizen its sides, the presence of iron as well as of copper.

A curious combination of the transmutation glaze with blue and white decoration is presented in the vase, attributed to the early *Ch'ien-lung* period, that is shown in Fig. 312. It is painted in underglaze blue with a landscape scene, hills with temples and pavilions, and a lake with boats upon it, and with bands of rectangular fret round the rims. This is overspread with splashes of *flambé* glaze, so as nearly to conceal the picture under variegated clouds of purple, crimson, and olive-brown tints, which become crackled where the glaze is thin. The interior of the vase is coated with the same crackled and variegated glaze.

The next special technical process to be noticed is that of the application of *soufflés*. The bamboo tube with gauze tied over one end that is used by the potter has already been described. With that the Chinese blow on the ordinary white glaze in repeated layers, as well as many of the single colors, such as the cobalt-blue, the high-fired reds derived from copper, the coral-red produced by iron, the pinks and carmines of gold, and the pure metals, gold and silver combined with a lead flux. The colors applied in this way can generally be recognized by the stippled aspect of the glaze, which is well marked in the *sang-de-bœuf* glaze of the Lang Yao, and in the ruby-red monochrome of the succeeding reign of *Yung-chêng*, which is one of the most characteristic glazes of the class of porcelain known as Nien Yao. What we have especially to notice now are the compound glazes in which a second color is blown upon a monochrome previously prepared. Such is the "Robin's Egg," or *Chün Yu*, which was alluded to in Chapter XIII as a *soufflé* glaze with a greenish-blue flecking and dapping on a reddish ground, the red being subordinate to the blue. The second color in these compound



FIG. 316. Vase, coated
sur émail with parti-col-
ored splashes of yellow,
green, and olive brown,
associated with a white
glaze of soft ivory tone.

glazes is either blown on so as to cover the entire surface of the first with a delicate stippling, combining with and modifying the original tint, such as red upon a green or yellow ground, or green upon yellow; or it is projected in layer drops, which dapple the surface or run down over the piece in regular veins, leaving traces like tears.

One of the best-known glazes of this class is the *Ch'a-yeh-mo*, or "Tea-dust" glaze, produced by the insufflation of green enamel upon a yellowish-brown ground, which owes its color to iron. The combination produces a peculiarly soft tint of greenish tone, which was highly prized in the reign of *Ch'ien-lung*, when it was invented, so that a sumptuary law was made, according to M. Billequin, restricting the use of this color to the emperor, to evade which collectors used to paint their specimens with imaginary cracks, and even to put in actual rivets, to make them appear to be broken.



FIG. 317—Snuff bottle with foliations in soft paste, white on dark blue ground, *Ch'ien-lung*.

Another *soufflé* combination of the same time produced the *T'ieh-hsiu-hua*, or "Iron-Rust Decoration," which has been described in Chapter XIV, and is well illustrated in colors in Plate XIX. The *Ku-t'ung-ts'ai*, or "Ancient Bronze Coloring," which is one of the chief triumphs of the same reign of *Ch'ien-lung*, offers some analogies to the iron-rust decoration. There is a specimen in the *Musée du Louvre* (No. 248) which, according to M. Jacquemart, when placed among bronze objects can not be distinguished from them; it is necessary to examine it closely and to touch it to recognize the work of the potter. The ground of the piece is bronze-colored, some of the salient parts being gold-tinted; while the decorations impressed upon the sides, in the style of metal casting, have received in the hollow parts a greenish-blue enamel, which simulates perfectly the natural oxidation of an ancient copper object. A smaller specimen of similar character is shown in Fig. 274.

Some of the many imitations of natural materials on which the Chinese pride themselves were referred to in the same chapter. There are cups simulating walnut-wood, with the grain so perfectly rendered in painted enamels that it is difficult to believe, without handling them, that it is not the actual veining of wood. The vase in Fig. 316 is enameled inside and outside in colors of the *K'ang-hsi* period, laid on *sur biscuit*, to look like tortoise-shell.

The carved cinnabar lac, of which a specimen was illustrated in Plate XXXVII, 4, is sometimes laid and worked upon a porcelain base, such as a vase or cup. It is also perfectly imitated in porcelain, with the designs modeled in the paste in similar relief and enameled vermilion. There is another peculiar combination of the incrustated lacquerwork with porcelain, which has been named *porcelaine laquée burgautée*, after *burgau*, the French name of the shell of the turbo. This was first noticed and described by Jacquemart, but he erroneously attributes it to Japan, although the style of art and the nature of the porcelain both prove it to be Chinese. The Chinese call it *Lo-tien Tz'ü*—i. e., "Porcelain inlaid with shellwork"—and the technique is the same as that of the incrustated cabinet work of Canton, only worked upon porcelain instead of wood. The porcelain is comparatively thick, with solid rims, and the ground of the piece is usually left unglazed, so that the lacquer may adhere more firmly to the surface. The finest vases date from the reign of *K'ang-hsi*, and it seems to have been first worked on porcelain at this time, in spite of the fact that the mark of *Ch'êng-hua* of the *Ming* dynasty is occasionally found inscribed underneath.

The decoration of the *laque burgautée* class is generally of a landscape character, executed in a mosaic mother-of-pearl, varied sometimes by thin plaques of beaten gold and silver, displayed upon a velvety background of ink-black lac. The pieces of shell, extremely thin, are tinted artificially, shaped with the knife, and combined cleverly by the artist to form the details of the picture. The patience of the workman is almost incredible, shaping one by one the leaves of a willow-tree, or of a clump of bamboos, the feathers of a bird, the glittering morsels designed to represent the pebbly bank of a river, or the faults of a rock, and carving silhouettes for clouds and

PLATE LXXIV.

PALÉ-BLUE VASE.

VASE (P'ing), 10 inches high, with a decoration of floral bands and ornamental borders, worked in slight relief in the paste, under a monochrome glaze of pale grayish-blue color, derived from the native cobaltiferous ore of manganese. This is the t'ien-ch'ing, or "sky-blue," of Chinese ceramists, which resembles somewhat in tint the turquoise glaze illustrated in Plate XLV, although this is, on the other hand, derived from copper, and differs from the cobalt glaze in being minutely crackled.

The decoration consists of conventional scrolls of peonies round the body, with a band of false gadroons below and a border of scrolled "scepter heads" above. The rim of the foot is encircled by a continuous rectangular fret, and the shoulder is defined by a chain of similar design. The neck has a ring of palmations, alternately longer and shorter, ascending from the base.

The rim of the lip is marked with a line of brownish-yellow color. The foot is enameled underneath with the same grayish-blue glaze as the vase, without any inscription. It may be attributed to Kang-hsi (1662-1722).

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waves, fine and supple as the strokes of a pencil. There is a large bowl in the Sèvres Museum, covered with a lake scene, with lotus-flowers, reeds, and waterfowl, which is a *chef-d'œuvre* of naturalistic art. I have seen a large vase of the kind nearly three feet high, of the *K'ang-hsi* period, with the neck and swelling body filled in with black lac, exhibiting in delicately tinted mosaic the varied scenes of Chinese life, in their minutest details, each scene being labeled in tiny characters; the gilded disk of the sun was shining over all in its pristine brightness; but the silver walls of the houses had become quite black from age. The little cylindrical beaker illustrated in Fig. 315 is a less important example.

The next peculiar technical processes in the short list that forms the heading of this chapter are those of ornamental pierced work of the ordinary kind, and pierced work filled in with glaze, so as to form the transparencies which are known from their usual shape as "rice-grain" designs. These methods have been already described. They are now well known, and are practiced all over the world, at Sèvres and Worcester, as well as in Japan. Fig. 318 is a Japanese vase of this description that was exhibited at the Chicago Exposition. They may be used in combination with all kinds of decoration, but are most charming and effective in pure white porcelain, such as the little white cups of design similar to the one illustrated in Fig. 138, which are lined with beaten gold or silver when used, and the white bowls with lacework transparencies of the *Ch'ien-lung* period, which are the lightest and most delicate of all the triumphs of the ceramic art. A white cup of the kind just referred to is presented in Fig. 319. The sides are carved with a trelliswork of *svastika* pattern, in the intervals between five circular solid medallions, from which stand out in salient relief figures of the longevity god, alone in his glory, and of the eight Taoist genii, associated in pairs. The figures, modeled in "bis-cuit," project from the glazed ground of velvety aspect. Their background of clouds, and the light scrolls which wind round the borders of the cup, are worked in white slip, contrasting in its cloudy opacity with the underlying glaze. The delicate little cup in Fig. 322 is carved in openwork with a broad trellis band composed of five medallions of pierced floral pattern, connected by a ground of interlacing circles, reminding one of the open tilework of Chinese architecture. A narrow pierced band encircles the upper rim.

The little flower cylinder in Fig. 333 shows the combination of pierced work with painted decoration. It is a receptacle for scented blossoms like the fragrant jasmine, the *mo-li-hua* of the Chinese, which is closed at the top, but has a hole in the bottom for the introduction of the flowers, shaped for a screw cover. The top and sides are painted in delicate enamel colors of the *Ch'ien-lung* period, upon a ground molded in relief, and pierced in the intervals of the decoration, so that the scent of the flowers may penetrate. The figures, which are grouped under a tall pine, represent the Taoist Triad of star gods. Lu Hsing stands in the middle, holding a *ju-i* scepter; Shou Hsing, upon his right, is leaning upon a long, gnarled staff, with a scroll tied to the top, a peach in his hand, his robes brocaded with longevity characters; Fu Hsing, upon his left, holding a baby boy in his arms, while two sprites dance in the foreground, clapping their hands. On the cover is a representation of a Taoist figure speeding across the clouds, with a branch of sacred peach on his shoulder.

The "rice-grain" decoration, in which the pierced ornamentation is filled in with glaze, seems to be of comparatively modern introduction in China. No marks anterior to the reign of *Ch'ien-lung* have been noticed, and the majority of the marked pieces bear the date of his



FIG. 318.—Beaker-shaped Vase of Hirado porcelain, with the decoration partly painted in shaded blue, and partly pierced and filled in with glaze so as to appear as a transparency.

successor, *Chia-ch'ing* (1796-1820). The white bowls and saucer-shaped dishes of the soft, fritty material made in Persia, which were known as Gombroon ware, have rude decorations of the same nature, but, as Sir A. W. Franks observes, "there is no evidence to show in which country this mode of ornamentation originated." In addition to the ordinary rice-grain work, which is usually associated with conventional designs, painted in blue of grayish tone, this process supplies a means of varying the usual colored designs by making the dragons, storks, or other details transparent, or by picking out some of the leaves in the foliage or the petals of a flower. The mug of European form in Fig. 321 displays the typical mode, the sides being pierced with a broad band of rice-grain transparencies arranged in a formal star pattern. The handle, composed of two interlacing bands, is studded at their four points of junction with flowers worked in relief, which are tinted in underglaze cobalt-blue, touched with gold, and the bands of conventional design, which are painted in the same grayish blue round the borders, are also picked out with gilding. The upper rim is stained brown; the bottom is unglazed, and there is no mark attached.

The class of porcelain with white slip decoration includes those specimens in which the white decoration appears to have been applied in a semi-liquid state, technically called "slip,"

or *engobe*, on a colored ground. Designs are also modeled in relief in the same slip in the paste of porcelain before it is glazed, and have been referred to in the description of celadons and *flambés*, as well as in that of decorated vases, but these would be excluded. The white slip decoration is used in China in combination with one of the dark-brown coffee-colored monochromes of the *tsü-chün* glazes, or with the dark and pale blue and the lavender-tinted glazes derived from cobaltiferous manganese. Some of the soft, siliceous wares of Persia are ornamented on a blue ground with white designs of this kind applied in relief, and they have been imitated in the Italian potteries, at Nevers, Rouen, and elsewhere.

For this reason Jacquemart has attributed the vases of hard porcelain with white slip decoration on a brown ground to Persia, and he figures one, which is undoubtedly Chinese, in Plate XIX, No. 1, of his book, as a production of Shiraz. There is no reason, however, to suppose that hard porcelain was ever made in Persia, although it appears from their style and designs that some of the specimens were made in China for the Indian or Persian market. The gourd-shaped vase shown in Fig. 323, which has a copper rim and cork-like stopper engraved with figures and birds of Persian workmanship, is a fair illustration of the style, dating from the *K'ang-hsi* period. It is enameled with an iridescent *tsü-chün* ground of dark-brown color. The white decoration over the glaze, roughly modeled in low relief and lightly touched with the graving tool, consists of four sprays of conventional flowers, two on each half of the gourd. The three circles from which the lower sprays seem to sprout would be rocks in more finished work; in Jacquemart's vase, which is almost as roughly decorated as this one, there is a somewhat similar design, which is taken for an articulated cactus-stem; in addition to the floral decoration there is an ornamental border round the bulbous enlargement of the neck of this vase of scroll design with beaded pendants, which is often met with upon Chinese vases of this type.

The other illustration exhibits, in Fig. 324, a small vase of baluster form, also attributed to the *K'ang-hsi* period, invested with a pale-blue glaze of the tint called by the Chinese *t'ien-ch'ing*, or "sky-blue," sparsely crackled with a few brown lines. It is decorated in slight relief with a spray of blossoming prunus carefully modeled in white slip and finished with the graving tool. The foot, coated with the same pale-blue glaze underneath, has the prominent rim artificially colored iron-gray.



FIG. 319.—White Cup, with pierced trellis work enclosing solid panels, studded with projecting Taoist figures, which are partially unglazed.

PLATE LXV
CRACKLED TURQUOISE
FLOWER-POT

FLOWER-POT (Hua P'ên),
of rectangular outline and ob-
long section, with the rim in-
curved, resting upon four scrolled feet
The interior is strengthened by six ver-
tical ribs, the bottom is perforated by
two round holes. It is enameled out-
side with a rich translucent glass of
deep turquoise tint, which is minutely
crackled throughout with a network of
well-defined lines.

The interior and the under surface,
both for the most part unglazed, ex-
hibit a pale, whitish texture, resem-
bling that of the ware figured in Plate
LXXXIV, and this flower-pot is also
to be referred to the Ming dynasty. It
is probably a production of the reign of
Wan-li (1573-1619).



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FIG. 320.—Tazza-shaped Cup, with conventional decoration in enamel colors of the Ch'ien-lung period

CHAPTER XIX.

CHINESE CERAMIC COLORS.

THE principal colors used by the Chinese in the decoration of their porcelain and the chemical composition of some of them have been already alluded to. A list of the colored glazes employed during the *Ming* dynasty was included in Chapter VIII, together with a number of the prescriptions used in their preparation. Still, a short chapter on the special subject of ceramic colors may not be superfluous.

The most striking point in Chinese ceramic art is the paucity and simplicity of the materials with which they produce so many brilliant effects. They have no chemical knowledge, and their methods are entirely empirical, depending on the varied effects produced by the admixture of the simple coloring materials, on the different results obtained by their combination with different glazes, and on the degree of oxidation of the minerals due to the manipulation of the fire. Take, for example, the native mineral which, after calcination and pulverization, is used for painting in blue and white, and in the preparation of blue glazes. It is found on the hillsides in several parts of China, occurring, not far from the surface of the ground, in small, irregular nodules of concretionary formation, and is essentially a cobaltiferous peroxide of manganese, mixed with oxides of iron and nickel, with traces of arsenic, bound together by a variable proportion of silica. But the composition of this complicated ore seems to vary indefinitely, not only in the productions of different provinces, but even in specimens dug up from the same hillside. The purity of the blue depends upon the richness of the mineral in cobalt; an excess of manganese will give it a purplish tinge; it will be darkened by too much nickel or iron. So the presence of an expert is required at the imperial manufactory, whose sole duty it is to pick out the best pieces, judging from their color and aspect, to supply the coloring material for the painted decoration in blue and the powder-blue grounds, and for the monochromes ranging from the darkest blue *chi ch'ing* down to the palest *clair de lune*, which are obtained by mixing the calcined mineral in different proportions with the ordinary feldspathic white glaze of the *grand feu*. The blue enamel of the muffle stove, used in overglaze decoration in colors, is also formed of the same cobaltiferous material, combined with a vitreous flux; it varies very much in tone, and is often of purplish tint. The same mineral is used in the preparation of the ordinary black glaze of the painted wares, and of the aubergine purple glaze of the *demis-grand feu*, but in these cases the colors are due mainly to manganese, and the Chinese expressly say that the poorer ores are available for these two glazes. The cobaltiferous ore is used, again, to modify the tint of other single colors, to give a pea-green hue to the ordinary celadon glaze due to the protoxide of iron, or to convert the carmine (*yen-chih lung*) of gold purple of Cassius into amaranth, the color of the blue lotus-blossom (*ch'ing-lien*) of Chinese ceramic art.



FIG. 321.—Mug, with a star pattern and a picket fence design, work, and painted borders of blue picket out with gold

The influence of different glazes and of the reducing or oxidizing powers of the flames in changing the colors of the same material is well illustrated in the case of copper. When this element is maintained in a highly siliceous medium in the minimum condition of oxidation in a reducing fire, it develops, as a suboxide, a brilliant red of ruby tone, the typical red of the *grand feu*. When fired with a lead flux it becomes fixed as a protoxide, and develops a brilliant green, ranging from pale apple-green to the deepest emerald in the *gros vert*, according to the concentration of the glaze; it becomes in this way the source of all the greens of the muffle stove, as well as of the finely crackled cucumber-green of the *demigrand feu*, which is applied generally *sur biscuit*. Finally, when fired with niter, or with a lead flux containing an excess of alkalis, the silicate of copper is still more highly oxidized, and develops a beautiful turquoise-blue. Similar changes may even be



FIG. 322. Cup of White Porcelain, pierced with medallions and bands of delicate trellis work.

made to appear upon the same piece. A Lang-Yao vase, for example, often displays a patch of apple-green toward the edge of its rich mantle of *sang de bœuf*, and the peach-bloom glaze owes its charm to the peculiarly soft combinations produced by the fortuitous mingling of the two colors. The three colors are all seen together in the mottled garb of a *flambé* specimen, brought out by the oxidation of the glaze while still fluorescent by a current of fresh air suddenly introduced into the furnace.

So iron, when fired in a reducing atmosphere in the large furnace, in the presence of a large excess of silicates, develops, as a protoxide, the peculiar sea-green tint known to us as celadon, deepening to an olive shade, or to a dark bottle-green, as the proportion of iron increases. The same element develops, as a peroxide, a graduated series of browns, ranging, according to the concentration of the glaze and the "warming" influence upon the color of the oxidizing flames, from pale buff, through *café au lait*, dead leaf, chocolate, and bronze, to the blackish shade of the darkest *fond laque*. The peroxide mixed with a simple flux of white lead painted on the porcelain over the white glaze, and fired in the muffle stove, produces the beautiful red which, in its purest tone, reminds one of coral, and is usually called coral-red. This is the *mo hung*, or "painted red," *par excellence*, of the Chinese. When it is combined with a silico-alkaline vitreous flux it takes on a brighter hue of the same vermilion color, which suggests to the Chinese the red cheeks of the ripe jujube, one of their favorite fruits, so that they call the glaze now *tsao-erh hung*, or "jujube-red."

The above shades of red differ completely in tone from those of the other red of the muffle stove, which is obtained from gold precipitate, the compound of tin and gold which is commonly known as purple of Cassius. This produces the tints of the underneath borders of the rose-backed dishes, which are enameled with glazes of single color ranging from deep carmine, the *yen-chih hung*, or "cosmetic rouge" of the Chinese, down to *feu hung*, or pink, the "rose Pompadour," or "rose Du Barry," of French ceramic writers.

There is occasionally, on the other hand, a remarkable resemblance in the shade of coloring of glazes produced from different elements, so that a pale cobalt monochrome of sky-blue (*f'ien ch'ing*) tint may be confused for a moment with an azure-tinted glaze of turquoise shade derived from copper. On closer inspection, however, the latter will be seen to have a minutely crackled texture, being one of the glazes of the *demigrand feu*, while the former is one of the single colors of the *grand feu*.

These few introductory remarks are intended to show that some knowledge of the chemistry of colors is absolutely necessary as an aid to their distinction and classification. Their proper distinction is often of great assistance in the correct chronological arrangement of the specimens in which they occur. The presence of any of the *rouges d'or*, for example, would

PLATE LXXVI.
CH'EN-LUNG VASE DECORATED IN
COLORS

VASE WITH COVER (Kai Ping), one of a pair of broad vessel shape, composed, as it were, of two vases caulked into one with the line of junction indicated by vertical grooves, surmounted by a double campanile cover crowned by two gilded knobs. It is painted in the finest enamel colors with gilding of the Ch'ien-lung period, tones of red predominating, and is a brilliant example of the famille rose. The body of the vase is filled with groups of playing boys painted upon a translucently white ground. On one side there is a group of children playing upon musical instruments, and carrying branches of peach-blossom, gathered round three goats, the special emblem of the creative energies of spring, indicated by the punning name of the design, "San yang k'ui tai." On the other side the boys surround a central figure holding a vase from which a cloud is issuing as it unfolds to display five flying bats, symbols of the five kinds of happiness. The reaching neck and the hollow of the foot are filled with broad bands of ruby-red, with the rose-d'or ground etched with scrolls and enlaid with chains of symbols painted in colors, fringed with narrower bands of yellow and sepia color diapered with flowers. The cover has a similar scrollled ground, with foliated rings round the knob.

The base, enameled pale green, is inscribed, in overglaze blue, with one line of antique "seal" characters, reading Ta Ch'ing Ch'ien lung nien chih, "Made in the reign of Ch'ien-lung (1736-95), of the Great Ch'ing [dynasty]"



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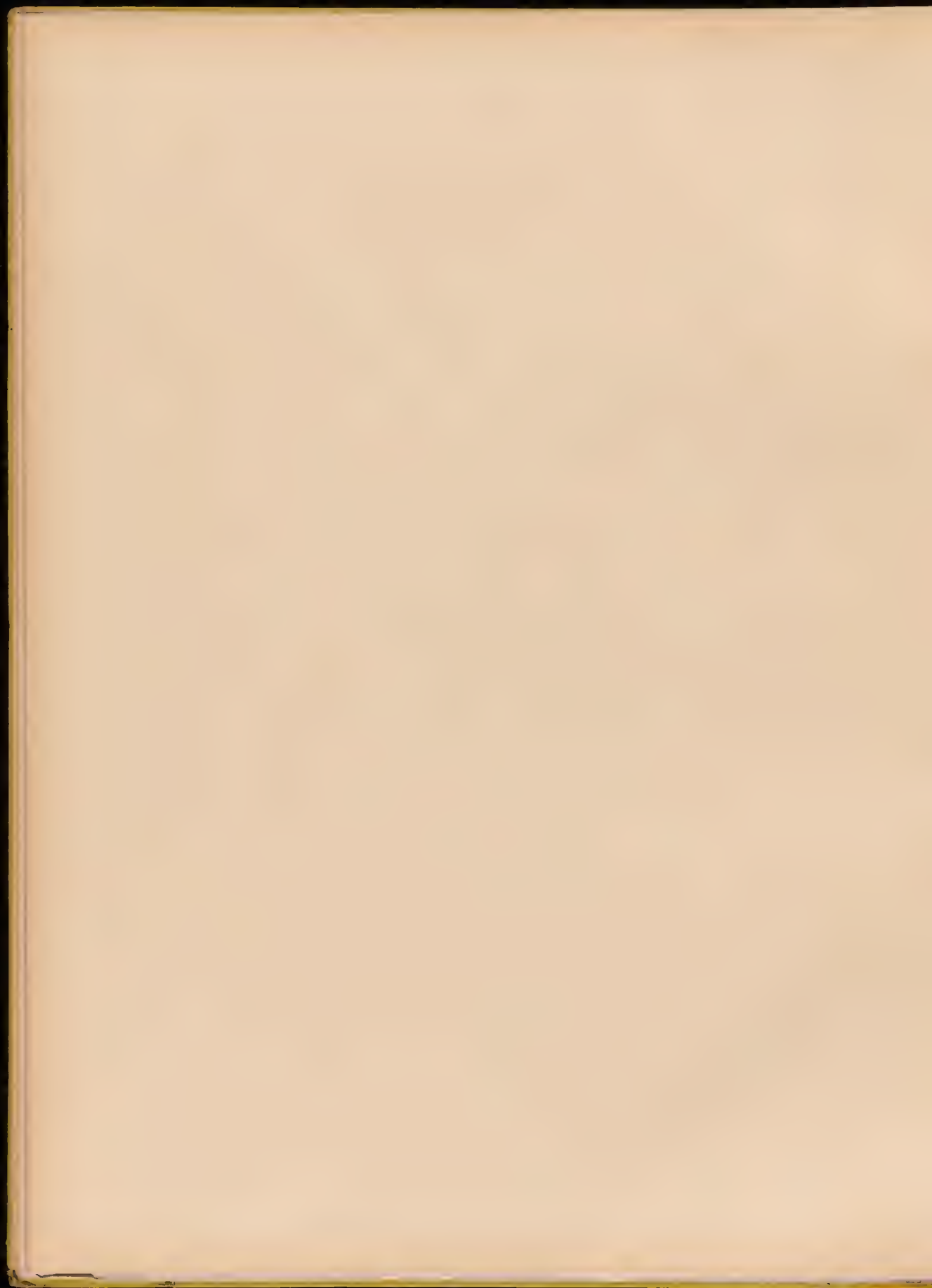
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prove that the piece could not be earlier than the seventeenth century, in the first quarter of which these colors were introduced.

The coloring materials used by the Chinese in the decoration of porcelain are few and simple when compared with those employed in Europe. They comprise oxide of cobalt for the ordinary blues; oxide of copper for certain reds and greens and for turquoise-blue; oxide of antimony for the yellows; gold for carmines and pinks; arsenious acid for opaque whites; oxides of iron for celadon, coral-red, and browns; and peroxide of manganese less rich in cobalt for the blacks and purples. "In Europe," as M. Ebelmen observes,* "they make use of the different oxides that have just been enumerated, and take advantage also of many other substances unknown to the Chinese. The tint of the oxide of cobalt is modified by combining it with oxide of zinc or alumina, sometimes with alumina and oxide of chrome; pure oxide of iron furnishes a dozen shades of red, from orange-red to the deepest violet-red; ochres, pale or dark, yellow or brown, are obtained by the combination of different proportions of oxide of iron, oxide of zinc, and oxides of cobalt or nickel; the browns are prepared by increasing the dosage of oxide of cobalt in the prescriptions for the ochres; the blacks, by the suppression of the oxide of zinc in the same preparations. We vary the shades of our yellows by the addition of oxide of zinc or of tin to clear them, and of oxide of iron to deepen their tone. Oxide of chrome, either pure or combined with oxide of cobalt or the oxides of cobalt and zinc, gives yellowish greens and bluish greens, which can be made to range from pure green to almost pure blue. Metallic gold furnishes for us the purple of Cassius, which we can afterward transform at will into violet, into purple, and into carmine. We may cite also the oxide of uranium, and the chromates of iron, baryta, and cadmium, which give useful colors, and will conclude by mentioning the recent application of metals unoxidizable by fire, the discovery and preparation of which require a knowledge of chemistry that the Chinese are far from possessing."

The poverty of the Chinese palette, however, is more apparent than real, as they produce by different combinations of the colors an infinite variety of shades, so that the color scale is almost exhausted in their series of monochromes. Some colors may have escaped their incessant researches, like the abnormal pigments extracted from petroleum and coal-tar, such as Magenta and Solferino, the fruits of recent scientific investigation, broken and fugitive tints of uncertain shade that can well be spared.

Ceramic colors are simple or compound, pure or broken; red, yellow, and blue are simple colors. Red and yellow form orange, yellow and blue form green, blue and red form violet; these are compound colors.

The intensity of the coloring can be attenuated by white, the colors can be deepened by black. It is by this means, by the addition of white or black to other colors, that all the different grades of tone are produced. M. Grandidier gives a list of about eighty different shades of color represented by select specimens in his own collection of Chinese porcelain, now worthily installed in the Louvre at Paris under his own official curatorship. They occur there not only as monochromes, but also as backgrounds for painted decoration in blue or in different colors, relieving and enhancing the brilliancy of the effect in an infinite series of combinations, several of which have been illustrated and referred to in our own pages. Porcelain is conveniently divided into monochrome and polychrome, but in actual practice the same colors are used for both kinds, the only essential requisite being that they will withstand the degree of temperature required for the firing. The same gold pink (*rose d'or*), for example, that is used for enameling the monochrome black of an eggshell dish, serves for penciling the diapered bands that decorate the interior; and the same cobaltiferous material that is blown on to form a powder-blue



FIG. 323.—Gourd-shaped Vase with conventional decoration in white slip upon a dark brown iridescent ground, and Persian chased metal mount and cap.

* *Travaux Scientifiques*, t. III, p. 423

ground is used for painting the blue lines of the pictures in the medallions reserved for the purpose. In another class of pieces that have been already decorated in colors of the *grand feu*, the white ground may be subsequently filled in with soft enamels such as yellow or coral-red, or, again, any of the singly-colored grounds may be stippled with *soufflés* of other enamel, to be subsequently fixed in the muffle stove.

The decoration of Chinese porcelain becomes more interesting when their methods of applying the colors are compared with those employed in Europe. As M. Ebelmen explains, the processes employed in Europe are very varied: sometimes pastes of different colors are used



FIG. 324.—Small Vase with a pale-blue cobalt glaze, sparsely cracked, decorated with a floral spray executed in white slip.

for the body; sometimes the coloring material is incorporated with the glaze; sometimes, again, the colors are applied upon the surface of white porcelain. The first two methods of decoration require a degree of temperature as high as that necessary for the firing of the porcelain itself. The colors employed are called *de grand feu*. For painting, on the contrary, upon the surface of porcelain, only such colors are used as can be vitrified at a much lower temperature than the preceding; these are the colors called *de moufle*, the only ones that afford, up to this time, resources for painting upon porcelain pictures that can be compared with oil paintings of the old masters on canvas.

The Chinese coloring materials can be classed in the same way as those used in Europe into two main divisions: those that can be compared with the colors of the *grand feu*, and those that have more analogy with the muffled colors. These last differ, however, from the European muffle colors in being mostly true vitreous enamels, the same that are used for enameling on metal. There is an intermediate division in China, known as the colors of the *deni-grand feu*, which differ from those of the first division in being combined with a lead flux, and fuse at a lower temperature, although practically they are generally fired in the same furnace. We will attempt a cursory classification of the colors under these three divisions, adding a few notes on the principal tones of color as we proceed.

1. HIGH-FIRED COLORS OF THE GRAND FEU.

The principal colors that come under this division are: the whites derived from the ordinary feldspathic glaze; the series of reds and a grayish celadon-green obtained from copper; the ordinary celadons, olive-greens, and different shades of brown, which owe their coloring to iron; the blues and purples of the cobaltiferous oxide of manganese, and the blacks derived from the same complex mineral. The coloring materials referred to above are occasionally used in combination; the sea-green celadon of iron is darkened by the addition of a dosage of the cobalt mineral, and the black monochrome ground of the cobaltiferous manganese is rendered lustrous and iridescent by the addition of *tsü-chün shih*, the ferruginous material of the *fond-laque* glazes. The work of the Chinese potters is mainly empirical, and some of their principal successes, the despair of European imitators, are due to mixtures, in different proportions, of the cobaltiferous, in manganesian and ferruginous minerals, with the fusible white glaze. The result will depend not only upon the richness of the materials in these ingredients, but also upon the atmosphere of the furnace, in its reducing or oxidizing effect.

The colors of this division are combined with a feldspathic glaze, rendered more soluble by a notable addition of lime. This distinguishes them at once from the colors of the next two classes, in the flux of which oxide of lead is an indispensable element. The coloring materials are usually mixed with the white glaze, and applied upon the white surface of the unbaked porcelain by immersion, by insufflation, or with the brush. Occasionally the color is projected by the *soufflé* method upon the body of the piece and invested afterward with the white glaze in successive coats. The porcelain in China is rarely submitted to a preliminary baking as in Europe, but some of the ancient celadon glazes are described as having been applied *sur biscuit*.

The white glazes may be noticed first. In every collection of Chinese porcelain there are two varieties of white that ought to be carefully set apart from the ordinary productions of the Ching-tê-chên potteries. These are the products of Ting-chou in the province of Chihli, and of Tê-hua in the province of Fuchien. The Ting-chou ware dates from the *Sung* dynasty; it has been described in Chapter V, under its two varieties, the *Fên Ting*, with the paste white like flour, and the *T'u Ting*, with a less pure yellowish body. The glaze, which is either uncracked or cracked, has in both varieties an ivory-white tone, and a texture resembling in surface that of soft-paste porcelain, to which it is frequently likened. The decoration, which is often of very intricate floral design finished off with bands of geometrical scroll-work, is either molded in relief or chiseled at the point in the paste under the glaze. The ornamentation of the *Ming* dynasty is less elaborate in character. During the present dynasty the old potteries are closed, but fine reproductions of the *Fên Ting* class have been made at Ching-tê-chên, especially in the reigns of *K'ang-hsi* and *Ch'ien-lung*.

The ceramic production of Tê-hua is the *Chien Tz'u*, or Fuchien porcelain of the *Ming* and *Ch'ing* dynasties, which will be described in a later chapter. It is the typical *blanc de Chine* of collectors, with a rich satiny glaze of siliceous aspect closely blending with the paste underneath, either creamy white in color, or of a more opaque tone approaching that of ivory; it is represented chiefly by well-modeled statuettes of Buddhist divinities, such as those of the Goddess of Mercy, of Maitreya the Coming Buddha, figures of lions and mythological animals, incense-burners, tea-pots and libation-cups, the latter of oval or octagonal shape, made to imitate the cups carved out of rhinoceros horn, with *appliqué* ornaments of archaic character.

After the specimens of these two potteries have been grouped upon separate shelves, there will remain a varied assortment of plain white porcelain to represent the potteries of Ching-tê-chên. White, when pure in tint, has always been highly esteemed in China, where the earliest porcelain was made to simulate the precious cups and bowls of translucent white jade. The reign of *Yung-lo*, the third of the *Ming* emperors, is distinguished for its fragile white porcelain ornamented with impressed designs giving transparent effect like the water-mark in paper, and the reign of *Wan-li*, toward the end of the same dynasty, is marked by the renaissance of pure white jadelike wine-cups of eggshell thinness and incredible lightness. White is the mourning color in China, and a relic of an imperial mourning dinner service is often seen on a foreign shelf in the shape of a rice-bowl etched with five-clawed dragons under a pellucid white glaze. The delicate white cups carved in openwork and the charming lacework bowls with pierced designs filled in with glaze were described in the last chapter.

Plain white porcelain is generally enameled, but there is a special variety which is purposely left in the state of biscuit without any coating of glaze, like the Parian ware of the West. The special Chinese name for this is *fan tz'u*—i. e., "turned porcelain," as if the vase were inverted, so that the unglazed interior appeared outside, and the fiction is occasionally kept up by applying a touch of glaze inside the mouth. Flower-vases molded with a string



FIG. 325—Vase, painted in enamel colors of the early *famille rose*, with the star gods of happiness, rank, and longevity, and the goddess Hsi Wang Mu with female attendant. The central decoration nearly covers the Chinese character *Shou*, "longevity."

network in relief, brush-cylinders, boxes for seal-color, and water-pots for the writing-table with landscapes in salient relief, snuff-bottles, and many other small objects, are met with of this kind. The covered cylindrical pots in which fighting crickets are kept, the open cellules in which they are brought to the fray, and the trays on which they fight, are usually made of brown earthenware, because it absorbs water more readily, but they are sometimes seen molded out of unglazed white porcelain.

In addition to the glazed white porcelain intended to remain plain white, a quantity is turned out to be subsequently decorated with enamel colors. Most of it is finished at the manufactory; some is sent to Canton and painted in the peculiar style which characterized the old porcelain of the East India Company commonly known as "India China." An occasional piece has found its way abroad and been afterward painted in surface colors with European designs at Meissen or Chelsea.

The reds of the *grand feu* are derived from copper. The copper is generally applied in China in a metallic form, the molten metal, derived from the cupellation of silver, or from other sources, being granulated by being thrown into water, finely pulverized, and fused with a large excess of silica in a reducing fire, so as to be converted into a protosilicate. The firing is a most delicate operation, and must be stopped at the critical moment to attain a bright uniform color: if it be pushed too high, the metal will be dissipated, and the vase will come out wholly or partially colorless; if it be insufficient, the piece will be dull or liver-colored; if the flames be allowed to become oxidizing for a moment, it will be transformed into a persilicate, and be converted to green or even to turquoise-blue, this last color representing the maximum amount of oxidation. Copper is the protean metal which gives rise in this way to the varied changes of color known as furnace-transmutation, or *yao-pien*, which were described in the last chapter.

Red is a favorite color with the Chinese in the decoration of their porcelain, but this copper-red of the high fire is easily distinguishable at a glance from the reds of the muffle stove, which are derived from iron or gold. It shines out from the depth of the translucent glaze with tones approaching that of the ruby, so that the Chinese call it *pao-shih hung*, or "ruby-red"; the iron-reds (*fan hung*), on the contrary, are more superficial and of coral or brickdust hue; the *rouges d'or* (*yen-chih hung*), which are also surface enamels, are carmine or pink.

Copper-red is one of the most ancient of Chinese ceramic colors, being met with in some of the most brilliant monochromes among the productions of the Chün-chou potteries in the *Sung* dynasty. The reign of *Hsüan-tê* (1126-35) of the *Ming* dynasty was especially distinguished for its ruby-red, which was used at this time either as a single color or in painted decorations. The wine-cups used by the Emperor *Hsüan-tê* at the ritual services at the Temple of the Sun were made of this color. Later in the *Ming* dynasty, in the reigns of *Chia-ching* and *Wan-li*, we are told that the firing of the copper-red was found to be too difficult, and that its place was usurped by the iron-red, which was much cheaper, and easier of application. In the reign of *K'ang-hsi* it reappeared as the *Yu-li hung*, or "glaze-inclosed red," described at the time by *Père d'Entrecolles*, and the brilliant *sang-de-bœuf* of the *Lang Yao*, together with the attractive peach-blossoms of this period, were both discovered in attempts at reproducing the sacrificial red of *Hsüan-tê*. The attempts culminated early in the next reign in the production of the well-known monochrome red of the *Nien Yao*, a stippled color of bright uniform tint, which continued to be successfully produced during the reign of *Ch'ien-lung*. There is a marked renaissance of the copper-red as a single color in quite recent times, and a piece is occasionally seen rivaling the finest old *sang-de-bœuf* in its brilliant tones of color, although inferior in technical finish.



FIG. 326.—Libation Cup of antique Kuang Yao, with a mottled purple overglaze on a crackled yellow ground; dark grayish-brown paste

PLATE LXXVII
CH'EN-LUNG GRAY CRACKLE
VASE



VASE (Tsun), modeled in the form of an ancient sacrificial wine-vessel of the Han dynasty, with entwining bands worked in slight relief on the paste, and three volut bands fashioned in the shape of rams' heads projecting on the shoulder.

The glaze with which it is enameled is of grayish tint, crackled throughout with a close network of reddish-brown lines. Upon the shoulder of the vase, where the glaze is thicker, it is pale blue, and the crackled reticulation becomes almost colorless; also upon the spreading rim of the foot, where the crackles are smaller.

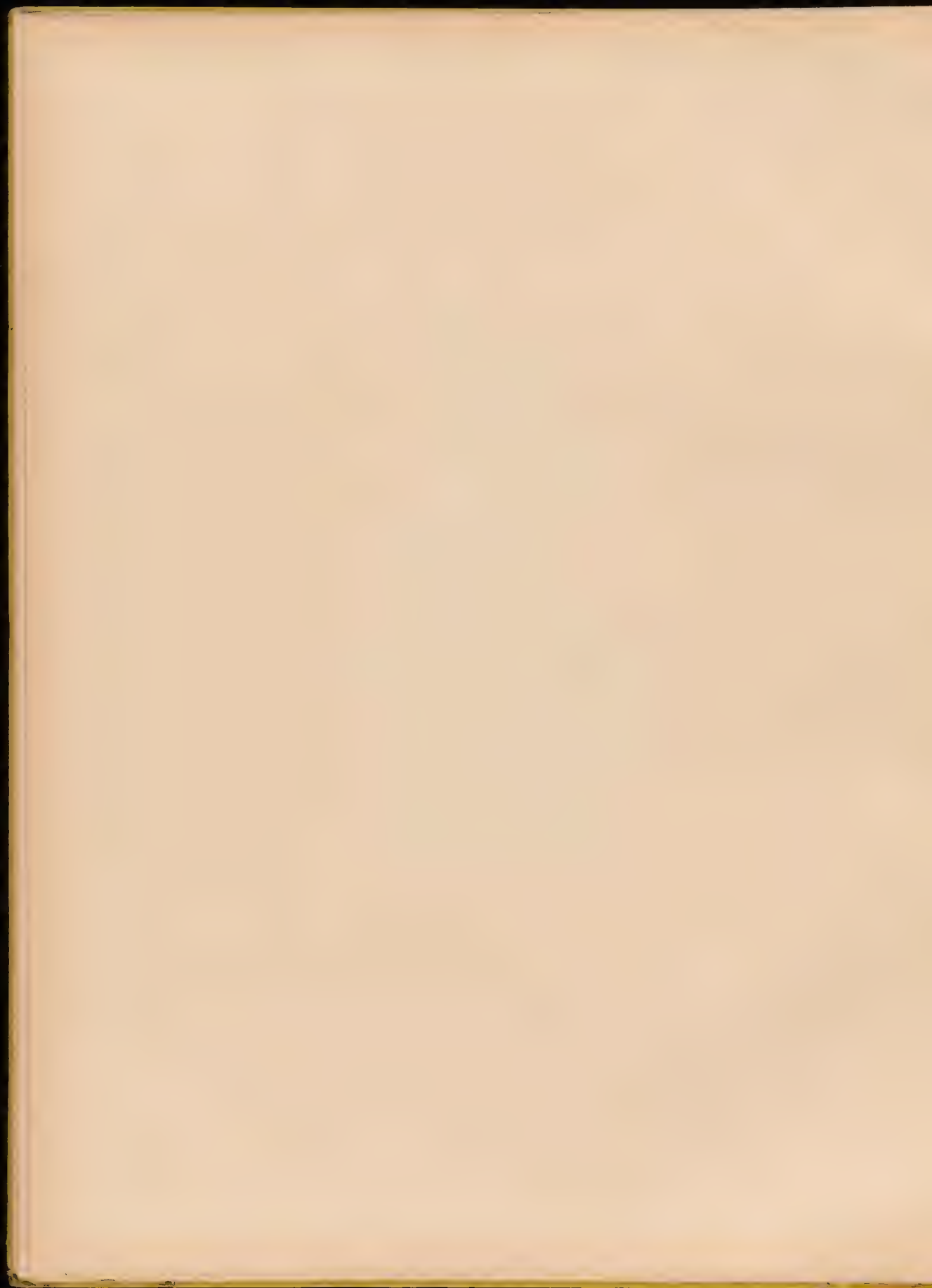
The same crackled glaze extends into the interior of the vase, and covers the base, which is marked in the middle, under the glaze, with the "seal" in dark cobalt-blue, inscribed 'Ta Ch'ing Ch'ien lung nien ch'ao—i. e., "Made in the reign of Ch'ien-lung (1736-95), of the Great Ch'ing [dynasty]."

741.1

and in the case of the latter, it is not
the same as the other two.

Stoffe, die sich in einem gew. Zustand





It may be useful to add a few points of distinction between these different reds. The Lang Yao of the reign of *K'ang-hsi*, which may be considered as the *sang-de-bauf* proper, displays a brilliant red of crimson tone, permeating the vitreous enamel, which is crackled throughout, and strewn under the surface with innumerable little points. These points have been justly compared to the tiny bubbles of carbonic acid that are continually rising to burst on the surface of gaseous water in a thermal spring. The vases are glazed underneath, and exhibit three typical bottoms, according to Chinese connoisseurs, a plain white enamel, a grayish celadon crackle, or an apple-green crackle. The red of these vases is rarely uniform; their chief charm is in the mingling modulated tints of their mottled texture and streaked depths, varied, perhaps, by an occasional patch of apple-green near the rim. Some are wanting in limpid depth and become brownish or even liver-colored; these are failures in baking.

The *Lü Lang Yao*, or "Green Lang Yao," of the Chinese is much rarer than the *sang-de-bauf*, and it is not certain that the pieces which exist were not accidentally produced in the firing of vases that were originally intended to be red. On careful examination a spot or two of red will generally be found lurking in places where the glaze is deepest. M. Ebelmen (*loc. cit.*, page 445) refers to several examples of celadon coloration as obtained by him in his experimental researches upon the copper-red. He explains how a reducing atmosphere is necessary to maintain the coloring material at a minimum of oxidation for the production of the red, and how, in an oxidizing atmosphere, on the contrary, the color would totally disappear if the volatilization of the metal were possible, or would become green if the coloring material survived in appreciable quantity. According to this hypothesis, some specimens of so-called celadons would be either abortive reds or copper-greens of sufficiently poor color. He places in his class of *celadon de cuivre* all the vases, barrel-shaped garden-seats, and balustrade fittings that the Chinese make in stoneware. He quotes also a very remarkable fact of a fragment of sea-green or grayish celadon porcelain, showing clearly in the fracture an opaque-red layer, looking like sealing-wax, in immediate contact with the paste. The oxidizing atmosphere, in this case, had acted only on the surface, which it had changed from red to a pale greenish tint.

Another glaze that owes its charming tints to copper is the peach-bloom, or *peau de pêche*, which has been already described and fully illustrated in these pages.

The *Chi-hung* was brought to perfection by Nien Hsi-yao, the director of the imperial potteries in the reign of *Yung-chêng*. The name, which means "sacrificial red," dates from the reign of *Hsiian-tê* of the preceding dynasty, as already explained. The red vases of the *Nien Yao*, as this porcelain is called after its inventor, are coated with a deep, uniform glaze of ruby tone, the stippled texture of which indicates the method of application of the color by insufflation. In the next reign of *Ch'ien-lung* this single color loses something of its purity and transparency and becomes brownish, so that it has been compared to that of the skin of a medlar (*peau de nêfle*). The modern *chi-hung* vases are less uniform in tint, developing purplish or crimson mottled shades like the old *sang-de-bauf*, or changing to the variegated *flambé* tints described in the last chapter. But they are improving daily under the stimulus of high prices, and I have a new vase now before me, clothed in as brilliant a garb as any ancient Lang Yao specimen.

The next colors of the high fire for consideration are those due to iron, which range, according to the degree of oxidation of the metal, from the palest sea-green to the deepest brown. It is to the paler green shades that the term celadon is properly confined; the darker shades, which are due to the peroxide, are the yellow-browns and browns of the *fond-laque* division. Some French ceramic writers use the term celadon in a much wider sense, to include the pale blue derived from cobalt, which is the *yueh pai*, or *clair de lune* of the Chinese,

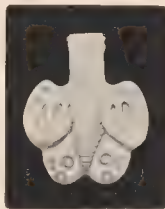


FIG. 327.—Butterfly shaped Soufflé bottle; imperial yellow glaze

and hardly needs a second name of "starch-blue" celadon (*celadon bleu d'empois*), as well as the *soufflé* tea-dust (*ch'a-yeh mo*), and some even group the crackled turquoise and purple of the *demi-grand feu* in the same division. We use it here as generally synonymous with the Chinese ceramic color *tou-ch'ing*, literally "pea-green," which includes the two varieties of *Tung ch'ing*, the color of the old celadon ware made at the Eastern Capital of the *Sung* dynasty, and the *Lung-ch'üan yü*, the glaze of the ancient Lung-ch'üan celadons of contemporary date. The prescription for the *tou-ch'ing* glaze, which was applied to the celadons of the *Ming* dynasty, made at Ching-tê chên, was coloring material was derived and the color was explained lime and iron developing a influence of a reducing atmosphere of oxidation. A similar prescriptions of the present dynasty, where-is made by the addition of a small oxide of manganese, the effect of it approaches that of the Ch'indional color of the ancient

The celadons comprise some of which approach blue; the tones vary with the depth effect of the incised and relief pany it. The old celadons of sometimes darkening almost coming in exceptional cases this is explained by the chem-"What would happen if the oxidizing atmosphere? The if the iron were in sufficient hardly any green in it should are found in Chinese produc-of iron be increased a little, dons to a deep lac-brown in olive-green or a bottle-green

The browns, in fact, owe rial as the celadons, the com-called *tsü chin shih*, literally it is the mineral source of the ceramic golden browns. Its preparation and mode of application were fully described in Père d'Entrecolles's Letters. When mixed with a large excess of feldspar and lime it produces a clear buff, or an "old-gold" tint. The Chinese tell how the potters tried to produce a yellow monochrome by mixing actual gold with the glaze of the high fire, but found that the metal was all evaporated in the furnace, so that they returned to the *or bruni* as a graceful and efficient substitute. Among other monochrome shades of this class, found on highly fired Chinese porcelain, are brown ochre, *café au lait*, chestnut, capuchin, maroon, dead-leaf (*feuille morte*), chocolate, bronze, lac-colored (almost black), etc. The darker shades are often highly iridescent.

The blues of the *grand feu* owe their color to cobalt, which resists the highest temperature of the furnace. The Chinese coloring material is a native cobaltiferous mineral of very variable composition, which has been already sufficiently described. The best pieces having been selected by an expert, they are first calcined in porcelain capsules, and then pulverized in hand-mortars for a whole month before the material is considered fit for use. The purest and most brilliant blues are produced when the material is applied immediately upon the raw white body of the



FIG. 328.—Tall Vase, thirty inches high, decorated with a battle scene in enamel colors, of early K'ang nsi date.

given in Chapter VIII. The from a yellow ferruginous clay, to be due to the silicates of light greenish shade under the maintaining the iron at a minimum tion produces the *Tung-ch'ing* celas the Lung-ch'üan glaze of to-day dosage of calcined cobaltiferous which is to darken the shade till

nese olive, which is the tra-Lung-ch'üan wares.

many shades of clear green, others tend to become gray; of the glaze, enhancing the designs which often accom-the *Sung* dynasty are found to bottle-green, or even be-brownish. The *rationale* of ist M. Ebelmen, who asks: celadon glaze were fired in an tint would pass into red, and proportion a warm tone with be obtained. All these shades tions, and if only the oxide one can pass from the celan oxidizing atmosphere, to an in a reducing atmosphere."

their color to the same mate-pact ferruginous clay, which is "brown gold stone," because

PLATE LXXVIII
CUCUMBER GREEN CRACKLED
VASE

*V*ASE (Ving), enameled with a monochrome glaze of green of the color of cucumber-rind (the kua-p'i lu of Chinese ceramists), minutely and uniformly crackled throughout. The glaze exhibits an undulating surface, and the green color takes on a mottled aspect in places, becoming slightly paler on the shoulder in one spot which happens to be more thinly covered. The finely crackled or craquelé surface of this bottle offers a typical example of the yü t'eh wên, or "fish-roe crackle."

The foot is invested underneath with a similar crackled green enamel. The upper rim is touched with brown, which is concealed in the illustration by the shiny stopper.

Period Ch'ien-lung (1736-95)

1871

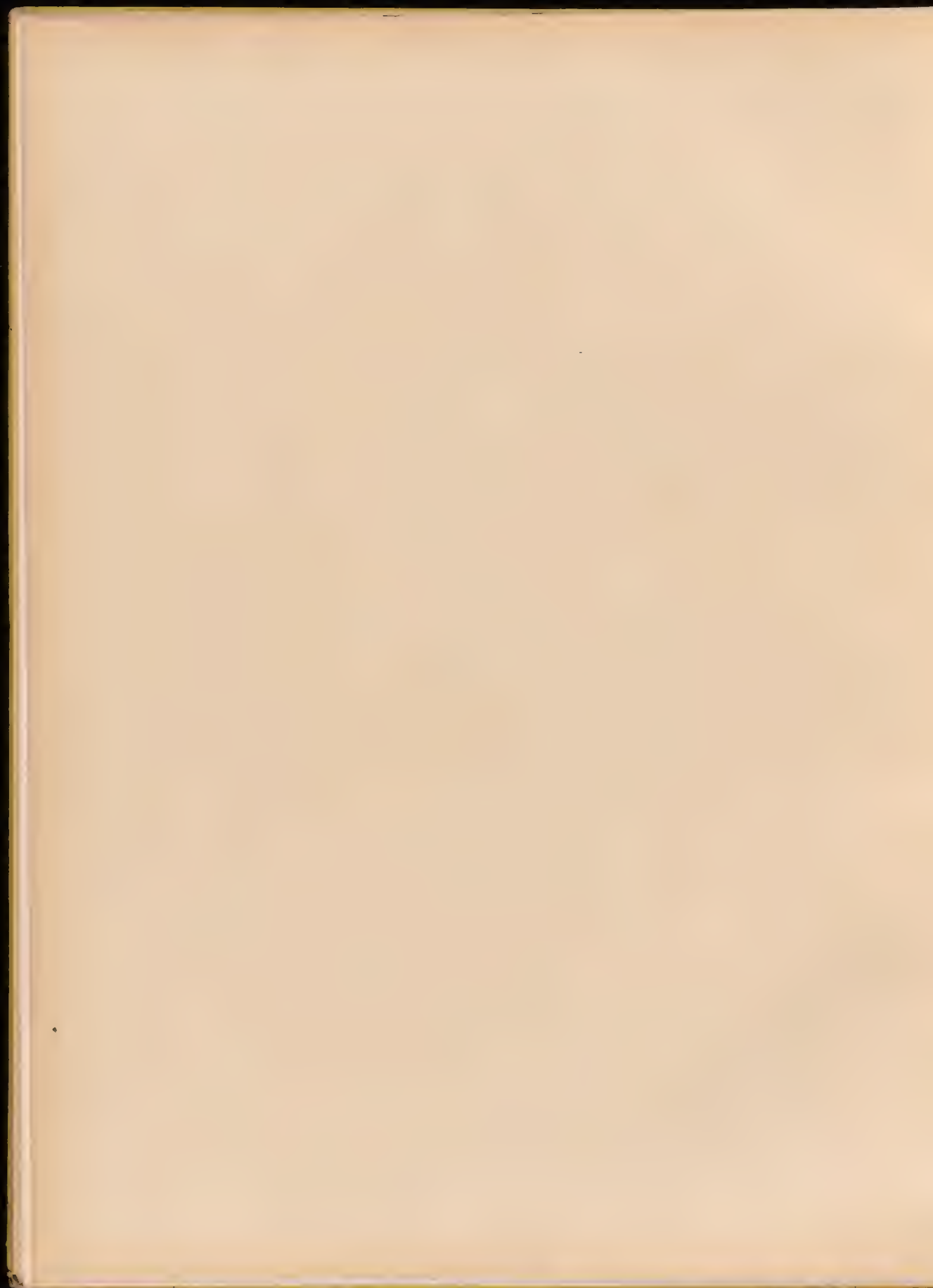
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1871

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unbaked piece, and covered with the white feldspathic glaze which it penetrates under the solv-
ing influence of the fire. The magnificent blue and white decoration, and the powdered blue
grounds of *lapis lazuli* tint that distinguish the reign of *K'ang-hsi* were all executed in this
way, giving an undulating intensity and pulsating depth to the color, and preserving it, more-
over, indefinitely, so that a vase two hundred years old will look as if just fresh from the kiln.
If the ore be not sufficiently rich in cobalt, the color will be grayish; if the glaze be too thin,
or the piece be overfired, so that the color comes to the surface, it will be turned black by the
oxidation of the manganese, which is always present in the ore. The *soufflé* blue may be
crackled by the addition of the proper ingredients to the white glaze, bringing out a clear color
quite different in tone from the more finely crackled deep sapphire-blue of the *demigrand feu*,
illustrated in Plate XXIX, in which the cobaltiferous material is combined with a lead flux.

When mixed with the feldspathic glaze and applied in the fashion of the ordinary single
colors the effect of the cobalt is different. There is no longer the same intensity and depth of
color, but we have in compensation a peculiar purity of tint and softness of tone in the series
of charming single colors which the Chinese potter has achieved in this way. The most deli-
cate of all ceramic colors, the *yueh pai*, or *clair de lune*, displayed in Plate LI, is produced by
the smallest addition of cobalt. Added in larger quantity the ordinary *t'ien ch'ing*, or "sky-
blue," glaze of the vase shown in Plate LXXIV is developed in the furnace. A still larger
proportion is required to bring out the *chi-ch'ing*, the "blue of the sky after rain," which is
defined as the deep azure of the clear rifts between the clouds.

We possess many specimens dating from the *Sung* and *Yuan* dynasties, like the two illus-
trated in Plate XII, which derive their color from cobalt-tinged glazes of the *grand feu*, crackled
or uncrackled in texture. They often display shades of lavender or pale purple, indicating the
presence of manganese in the coloring material. The celebrated ancient ware of Ju-chou was
purer in tint than any other of the *Sung* porcelains, being described as a *clair de lune* of the
color of the blossoms of the *Vitex incisa*, the "sky-blue flower" of the Chinese.

The same cobaltiferous mineral is utilized in the production of the black grounds of the
grand feu, for which purpose the pieces of ore that are less rich in cobalt will suffice. Père
d'Entrecolles describes two kinds of black
glaze. The first, which is duller in aspect,
is obtained by combining three parts of the
blue coloring material with seven parts by
weight of the ordinary feldspathic glaze, but
the proportions may be varied in accordance
with the tint required; the mixture is ap-
plied to the unbaked piece, which is after-
ward fired in the big furnace. It forms an
effective background for a decoration in gold,
which is penciled on after the first baking,
and fixed by refiring in the muffle. The
second black glaze, called *wu chin*, or "me-
tallic black," which is more lustrous and
iridescent in aspect, is formed by adding
some of the *tsü-chün shih*, the ferruginous mineral which produces the coffee-brown glazes, to a
liquid mixture composed of the above ingredients, in which the porcelain is plunged, and baked
in an oxidizing fire. If the firing be carelessly managed the color will be brown instead of
black, as we often see in modern pieces.

The colors of the high fire are used in combination with each other in the decoration of
Chinese porcelain, as well as singly for monochrome glazes. The essential point is that all the
associated colors should be able to be brought out properly by the same fire. The underglaze
cobalt-blue seems to be developed with any kind of fire if only it be buried in the depths of
the glaze in the presence of an excess of silica, so that we see blue and white painting, with



11. 32. —L-baton Cup of archaic form and design, painted in enamel colors of the K'ang-hsi period

touches, perhaps, of bright copper-red, associated on one vase with broad bands of palest sea-green celadon and zones of grayish crackle, and on another find zones of warm dead-leaf brown encircling the shoulder and rims and separating pictures penciled in blue. The blue seems to acquire additional brilliancy when enhanced, as it occasionally is, by a background of ox-blood or peach-bloom of the same mottled tones as characterize the single-colored vases of the period. Many of these different combinations have been already referred to; one of the most effective is that of copper-red with pale celadon, as illustrated in Plate XXXVI; in such



FIG. 330.—Snuff-bottle, imperial yellow crackle.

pieces the red coloring material is painted with a brush upon the unbaked surface before the celadon glaze is applied; it gradually infiltrates under the solving action of the reducing fire till it penetrates to the surface. There is always a certain lack of clearness of definition in designs produced in this way, which is often combated by tooling the outlines in the paste, or working them into low relief.

Another common combination of high-fired colors upon vases is that where the decoration is executed in blue and maroon with touches of celadon. The cobalt and copper colors are painted on under the glaze, while the celadon is inlaid, as it were, in the white enamel, filling in the outline of a rockery, for example, or some other detail of the picture. In other styles of decoration we see lustrous black grounds with reserve medallions containing cameo pictures in blue, and powder-blue vases with panels of mirror-black displaying pictures in gold that have been penciled on subsequently to the first firing. The dead-leaf and coffee-colored grounds of the *grand feu* furnish in the same way a long series of combinations. Finally come an infinite variety, designed for additional decoration in enamel colors, which can be fired in the muffle stove at a comparatively low temperature without injury to the original highly fired colors, on which the enamels are overlaid, or with which they are intermingled.

2. COLORS OF THE DEMI-GRAND FEU.

Among the monochromes peculiar to Oriental porcelain there are some which appear to have been applied *sur biscuit*—that is to say, upon porcelain that has already been fired in the furnace. On close examination they are seen to be *truitté*, to have a minutely crackled texture, a characteristic which is rarely seen in glazes fired at a very high temperature. On being tested with hydrofluoric acid by M. Ebelmen, they proved to contain, in addition to the blue, yellow, and green coloring agents, a notable proportion of oxide of lead. This approaches them to the enamel colors of the muffle stove included in the next class. They are fired by the Chinese in the deepest part of the large furnace, and are placed below the level of the vent-hole opening into the chimney, where the temperature is much lower than it is in the body of the kiln.

The colors of this class are not numerous; they comprise turquoise-blue, aubergine-violet, yellow, and green. Their composition is sufficiently well known, as they are all included in the list of colored glazes of which the prescriptions were given in Chapter VIII, extracted from technical books of the *Ming* dynasty, and the Chinese accounts have been confirmed by a qualitative analysis of actual specimens.

The mode of application of these glazes is described by Père d'Entrecolles. The bowls, for example, are first fired unglazed in the large furnace, from which they come out quite white but lusterless; if they are to be single-colored, they are immersed in a crock containing the coloring materials made into a kind of cream with water; if they are to be party-colored, like the bowls known to the Chinese as "tiger-spotted," which are daubed all over, inside and outside, with irregular blotches of purple, green, yellow, and white, the colors are laid on with a brush. The piece is finally fired again in the most temperate part of the large furnace, as a fierce fire would destroy the colors.

These were the earliest vitreous colors used in China, and they were employed centuries

PLATE LXXIA

IRIDISCENT EMERALD-GREEN
"RICKLE"

VASE (sandy), modeled after an
old, broken, Roman, with a long
neck, and upright rim, and two
tubed handles.

Composed of green glass, it is in-
teresting in that it is an example of
the art of the ancient Romans, and is
very much like the one in the
British Museum. It is a very fine
specimen of the art of the ancient
Romans, and is a very fine specimen
of the art of the ancient Romans.
The vase is a very fine specimen
of the art of the ancient Romans, and
is a very fine specimen of the art of
the ancient Romans. It is a very fine
specimen of the art of the ancient
Romans, and is a very fine specimen
of the art of the ancient Romans.



1875

1875

1875

1875





before the enamel colors of the muffle stove were introduced. Fusing as they do at a comparatively low degree of heat, they are available for the decoration of common pottery or earthenware, as well as of porcelain, and they are widely utilized for this purpose throughout the East, more especially for architectural decoration. In the celebrated porcelain pagoda of Nanking, which was rebuilt in the beginning of the fifteenth century (but is now destroyed), only the white bricks were made of porcelain; the colored tiers, panels, and antefixal ornaments were all of enameled earthenware. The roofs of the palaces and imperial temples in Peking are covered with yellow tiles; those of the princes with bright green; the Temple of Heaven shines in the sun as intensely purple as the vase in Plate XXIX; and broken ornaments in all the soft tones of crackled turquoise are to be picked up in the ruins of the summer palaces which were burned in 1860. All the four colors are represented also in the grotesque monsters of European form, and in the helmets and trophies of arms that were designed by the Jesuit Frère Attiret for the fountains and other decorations of the Versailles that was built under his superintendence at Yuan-ming-yuan in the last century for the Emperor *Ch'ien-lung*. These were made at the potteries near Peking. I allude to them here because at these very potteries they are now busily engaged in making a quantity of vases and bowls glazed with the same beautiful colors, to which the soft excipient seems to impart an added softness, which are destined for exportation to supply the increasing demands of enthusiastic collectors of "single colors." The fact that yellow clay used often to be mixed with the porcelain earth in the old fabrics, to enhance the brilliancy of the glaze colors, gives a certain *vraisemblance* to the fraudulent reproductions which I have seen sold for as many dollars as they would cost in cents to produce.

3. ENAMEL COLORS OF THE MUFFLE STOVE.

The materials used by the Chinese in their ordinary decoration in colors fuse at a much lower temperature than that required for baking porcelain, and they are painted over the glaze on pieces that have been previously fired, and which must be refired in the muffle to fix the colors. They may be compared to our own muffle colors, but they differ in some essential points, in their composition as well as in their mode of application.

There is, to begin with, a radical difference in the first principles of Chinese art, shown in the want of perspective, the absence of shading, and the studied avoidance of mixed tints. The highest aim of the artist at Sèvres is to copy an oil-painting on canvas of one of the old masters, to reproduce exactly every varied shade of color in the original, and to take care that, after baking, the picture shall appear uniformly glazed. The Chinese artist is attempting to reproduce on porcelain a water-color on silk or paper of one of his old masters, limned in pure, soft colors, with no broken tints and no mixed tones. The Chinese colors are far from presenting the uniformity of thickness and glazing that is considered to be *de rigueur* in Europe in a painting on porcelain. Some are brilliant, perfectly fused, and laid on so thickly as to stand out in tangible relief on the surface of the porcelain; the carmines obtained from gold, the purple-blues, the greens, and the yellows are examples; others, such as the iron-reds and the blacks, present generally a dull surface, and are only glazed in the thinner parts; their depth is always less than that of the vitrified colors. In the Chinese pictures there is no shading in the figures or other details; the outlines are sharply defined by single lines of red or black; there is no gradation in the different tints; the colors are laid on in broad strokes, to which the artist returns occasionally to execute a damask, either with the same color, with other colors, or with metals; he rarely mixes on his palette powders of different coloring materials. The aspect of their pictures, when examined closely, reminds one of the glass mosaics that were so artistically executed in Europe during the thirteenth century, and in which all the details of the design and modeling of the figures were produced simply by red or brown lines upon the mosaic work executed in fragments of white or colored glass.



FIG. 331.—Blue and white snuff bottle with red dragon

These enamels are colored by a small percentage only of the metallic oxide dissolved in the vitreous mass, and they require to be laid on thickly to give the proper intensity of tone; this gives a relief which is impossible to obtain by any other method, and imparts a certain *cachet* to Chinese productions. The general harmony of the coloring is due to the nature and composition of their enamels. The flux, in China, is composed of silica and oxide of lead combined with a greater or less proportion of alkalies. It holds in solution, in the state of silicates, a few hundredths only of the coloring oxides, the number of which is extremely limited. The coloring materials are *oxide of copper* for the greens and the bluish greens, *gold* for the reds, *oxide of cobalt* for the blues, *oxide of antimony* for the yellows, *arsenious acid*, and more rarely stannic acid, for the whites. Oxide of iron and the impure oxides of manganese, which give the first *red*, the second *black*, are the sole exceptions, and this is, no doubt, because it is impossible to obtain these colors in solutions by means of the oxides that have just been mentioned.



FIG. 332.—Artistic Vase of the Yang-ch'eng period, beautifully painted in enamel colors on a ground of purest white; neck strengthened by European mounting.

M. Ebelmen gives the following *résumé* of his researches:

"1. The colors called *muffle colors*—that is to say, baking at a very low temperature compared with that at which porcelain is baked—are essentially few in number.

"2. The palette is composed not of colors, properly so called, but of *enauels*—that is to say, of plumbo-alkaline glasses, variously colored by a few hundredths of dissolved oxides.

"3. The composition of the vitreous flux is generally very uniform; its tint is always light, and it is this lightness of tone, as well as the vivacity of the coloring, which gives Chinese porcelain its harmonious effect and characteristic richness.

"4. The enamels are colored by oxide of cobalt, by oxide of copper in the state of binoxide, and by gold—all substances easily soluble in a vitreous flux, and of very simple preparation.

"To these shades the Chinese add a yellow derived from antimony, and an opaque white, the base of which is sometimes tin, sometimes arsenious acid, both of which they mix with the other enamels, as they combine these last with each other to obtain a nearly infinite variety of shades, which, however, it is always possible to decompose and to reduce to the five following elements: Blue from oxide of cobalt, blue or green from oxide of copper, carmine from gold, and yellow from oxide of antimony.

"If we add to these enamels the very impure oxide of cobalt, which, under the glaze, will always develop into blue, the same oxide mixed with white lead to make it adhere to the glaze becomes black; and the calcined oxide of iron, which, combined with white lead and with flux, produces a series of iron-reds, dull or brilliant, light or dark; and finally gold, which is made adhesive by the addition of a tenth part of white lead, we shall be able to gain a complete idea of the means that form all the resources of the Chinese decorator."

The enamel painting in colors of the next period, which came in after the new Manchu dynasty was firmly established, is commonly known as *K'ang-hsi Wu ts'ai*—i. e., "Decoration in colors of the reign of *K'ang-hsi*." The pictures are usually executed entirely in enamels, the underglaze blue being replaced by a surface cobalt silicate of vitreous composition, which accompanies the old purple enamel color derived from the same native manganese ore less rich in cobalt. The full, strong red of coral tint continues and improves in purity of tone, and the greens become more and more prevalent and brilliant, so that the class has been called by the distinctive name of *famille verte*. This class, the coloring of which is perfectly shown in the vase illustrated in Plate VI, is also known in China by the name of *ying ts'ai*, or "hard

PLATE LXXX

VASE OF DARKEST OLIVE

TALL VASE (Ping), 18 $\frac{1}{2}$ inches high, enamelled with a monochrome glass of very dark olive color, becoming black in some parts, where the glass is thicker, as it collects, for instance, upon the shoulder and round the edge of the foot.

It was originally richly decorated in gold, with a pair of dragons rising into the air from the sea, traces being still visible on close inspection, of swaves below, and of the forms of large, four-clawed dragons pursuing jewels in the midst of clouds, extending over the bulging body and slender neck of the vase.

Although there is no mark inscribed underneath, the characteristic shape, coloring, and decorative style all indicate the reign of K'ang-hsi (1662-1722).



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colors," to distinguish it from a different style of coloring which was introduced toward the end of the same reign, executed in pale tints of pure tone and broken colors, among which carmines, pinks, and an amaranth purple, all derived from precipitated gold, appeared for the first time in ceramic art. This constitutes the decoration in *juan ts'ai*, or "soft colors," which is known also by the name of *fên ts'ai*, or "pale colors." Plate LXIII is a fine example of the style.

But it is time to examine the enamel colors in detail. They are brought to Ching-tê-chên in the shape of irregularly broken fragments of vitreous composition from the glass-works in the province of Shantung. A collection of Chinese glass will exhibit all the different single colors in their primitive state, simply molded into shape to form various kinds of utensils and ornaments. The pieces as they come from the glass manufactory, composed of a plumbo-alkaline flux of very uniform composition tinged by the metallic oxide which gives the color, have first to be pounded and finely pulverized, and at the same time a variable proportion of white lead is added if it be necessary to increase the fusibility, and some siliceous sand if the color be too soft. The color is finally worked on the palette, either with turpentine, with weak glue or with pure water, and painted on over the glaze with the brush.



FIG. 333. Cylinder with pierced openwork sides, decorated in enamel colors of the Ch'ien-lung period.

In addition to their use in the decoration of painted porcelain, these enamel colors are all used singly to produce monochromes. The class of monochrome enamels, all of which are fired in the muffle, will include: the reds of vermilion and coral tint derived from iron, exemplified by a typical example in Plate XCII; the carmines and pinks derived from gold, of which one is represented in Plate LIII; the yellows, ranging from the pale canary of Plate LXV to the deep imperial yellow of Plate V, which are derived from antimony, tinged more or less by the presence of iron; the plain, uncrackled greens of varied tone and sheen, often iridescent, which owe their color to copper binocide; the uncrackled sapphire-blue of intense tone known as *pao-shih lan*, due to cobalt silicate; the deep grayish purple (*tsü*) manganese monochrome, and a brilliant glossy black of vitreous composition.

The white enamel colors owe the opacity of their tint to arsenic, of which they generally contain about five per cent. The vitreous compound is widely used also in combination with other colors, being mixed with them, to modify their tint and make them opalescent. The various white enamels known to the Chinese by the names of *ya pai*, "ivory-white," *hsieh pai*, "snow-white," and *po-li pai*, "glass-white," differ but slightly in composition. The *yueh pai*, "moon-white," of the enamer's palette, which has a pale greenish tinge, is prepared by adding a small amount of one of the transparent greens to the white.

The blacks, of varied composition, all owe their color to cobaltiferous manganese not rich in cobalt. The calcined mineral is sometimes painted on combined with white lead as a flux and mixed with glue, when the surface will be a dead black, and only partially vitrified at the edges by combining with some of the silica of the white glaze. The *yu chin*, or "metallic black" of the enamer's palette contains an additional quantity of oxide of copper, which imparts a greenish tone. The same coloring material, when mixed with the ordinary vitreous flux, produces the brilliant color known as *liang hei*, or "glossy black," which contains a smaller proportion of oxide of manganese than the other blacks.

The blue of the enamel painter, like that of the *grand feu*, owes its color to cobalt. There are many shades, differing in fusibility, but all made by the same method, and consisting of oxide of cobalt, more or less impure, dissolved in a more or less fusible plumbo-alkaline glass. The color is very intense in the state of silicate, so that the deepest sapphire-blue does not contain more than one and a half per cent of oxide of cobalt, and the lighter azure-blue, called *fên ch'ing*, yields only one-third as much on an analysis of the flux. The presence of oxide of



FIG. 334. Blue and white Snuff-bottle Mark, Ch'ien lung

manganese gives a violet tint. The enamel fuses on the surface of the porcelain in salient relief so that it can be distinguished at once from the underglaze blue; its brittleness causes it to be easily injured, and it is occasionally found broken and scaled off in patches, the result of wear.

The green enamels used for the surface decoration of porcelain are all colored by oxide of copper, being either pure, or changed to a yellowish tone by the addition of prepared yellow, or to a bluish tone by the addition of arsenical white or the use of a harder flux. The flux is varied according to the tint de-



FIG. 335.—Snuff bottle, with foliations in relief. Mark. Tuo-kuang nien chih

sired. Oxide of lead in excess deepens the green; soda communicates a tint less blue than that developed by potash under similar circumstances. The pale sea-green tint used for filling in distant mountains is called for that reason *shan li*, or "mountain green"; this is the pure binocide of copper, and it is converted into turquoise-blue of darker or lighter shade by being mixed with different proportions of white enamel containing arsenic. The color called *ku li*, or *vert passé*, is made by the combination of antimonial yellow with the copper green. The deepest shade of camellia-leaf green,

called *ta li*, or *gros vert*, is brought out in the firing of the pure copper oxide dissolved in a highly plumbiferous flux combined with the smallest possible proportion of alkalis.

The yellows of the muffle stove are colored by antimony. Antimony alone is colorless, but in combination with oxide of lead it gives a bright canary-yellow when pure. When contaminated with iron a reddish or orange tone is produced. The purest tint is exhibited in the yellow ground of the vase illustrated in Plate LXV, and the same yellow characterizes the finest painted decoration of the period. The imperial yellow, which is specially reserved in China for the use of the sovereign, is of fuller, deeper tone, approaching orange. Peroxide of iron is purposely mixed with the pulverized yellow enamel to produce the surface color of dull aspect which is known by the name of *ku t'ung*, or "old bronze."

The deep purplish brown monochrome enamel, approaching a dark claret color, which is known to the Chinese as *tsü*, is produced by manganese. The oxide of manganese communi-



FIG. 337.—Snuff bottle in the form of a bud; yellow glaze.

cates to alkaline glazes, as we saw in the colors of the *demi-grand feu*, a beautiful *violet d'évêque* (bishop's purple), or aubergine purple; to lead glazes it gives the brownish or grayish purple of the muffle stove, which we find in imperial ware in combination usually with dragons and other ornamental designs, etched at the point in the paste underneath.

The reds of the enameleer's palette remain for consideration. They consist of two distinct and well defined classes, viz., the *rouges de fer*, which owe their color to iron peroxide, and the *rouges d'or*, which owe their color to gold precipitate, the purple of Cassius. The former are of brick-dust or bright coral hue; the latter are rose-colored, carmine, or pink. Peroxide of iron is self-colored, and does not require to unite chemically with any other substance to bring out its tint. In this it resembles the peroxide of



FIG. 336.—Snuff-bottle, dark, lustrous brown glaze over dark blue decoration. Ch'ien-ling







